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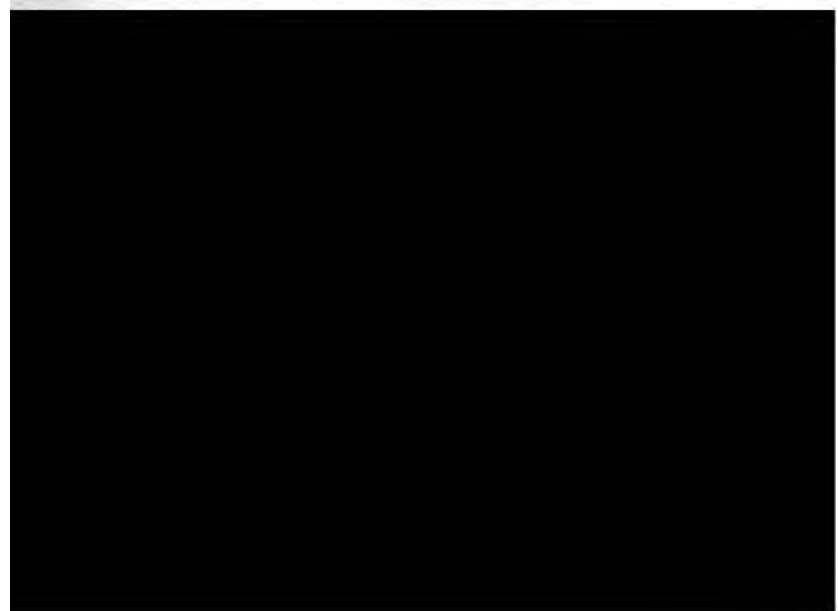
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THE  
COMPLETE WRITINGS  
OF  
THOMAS SAY  
ON THE  
Entomology of North America.


EDITED BY  
JOHN L. LE CONTE, M. D.

WITH A MEMOIR OF THE AUTHOR, BY  
GEORGE ORD.

WITH 54 PLATES.

VOL. I.

PHILADELPHIA  
A. E. FOOTE.  
1891.



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## P R E F A C E .

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The number of works through which the descriptions of insects published by Say are scattered, has been a serious obstacle to the progress of Entomology in the United States. As the founder of that branch of science in this country, the basis of all knowledge of our species rests upon a correct determination of those known to him ; but the labor and expense of acquiring this information is so great, in consequence of the cost and number of the works to be consulted, that it is within the power of few to possess even a moderately complete series of his contributions.

For the purpose of aiding the researches of the student of Entomology in this country, and for the securing of due credit to the labors of this great naturalist abroad, I have here brought together all the descriptions of insects published by him. By the introduction of the paging of the original publications [in brackets] into the body of the text, the labor of referring to a separate index for the place of publication is obviated, and the true reference can be readily made.

With the view of increasing the usefulness of the work, notes have been added, in which the species, so far as possible, are referred to genera adopted in the present condition of science. And I must here express my earnest thanks to Baron R. von Osten Sacken, of the Russian Legation, at Washington, for his kindness in furnishing me with his notes on the Diptera described by Say, and to Mr. Philip R. Uhler for similar notes upon Orthoptera, Neuroptera and Hemiptera.

My own researches upon the Coleoptera of the United States have led me to follow very nearly in the path of Say,

over the regions adjacent to the Rocky mountains, while diligent collecting in other parts of the country has been attended with such success, that but few of the species known to him are wanting in my collection. The entire destruction of his original specimens would be the subject of much greater regret, were it not for the fact that his descriptions are so clear as to leave scarcely a doubt regarding the object designated. I am thus enabled to assign to nearly all of his Coleoptera their proper place in the modern system.

Such of the original plates illustrating the American Entomology as remain, have been purchased for the present work: unfortunately plates 37—54 have been destroyed; these have been re-engraved by Mr. John Gavit, of Albany, which will be a sufficient guarantee of their being exact copies. The plates of Coleoptera have been recolored from specimens, and will be found more correct than those in the original work.

Typographical errors in the original memoirs have been corrected; other errors have not been changed, or if noted, the corrections have been placed in brackets.

To add interest to the work, Mr. Ord, late President of the Academy of Natural Sciences of Philadelphia, has kindly permitted me to use the heretofore unpublished memoir of Mr. Say, written by him, and read before the

American Philosophical Society. The last and only



# A MEMOIR OF THOMAS SAY

FOREIGN MEMBER L. S. AND Z. S. LONDON.

Read before the American Philosophical Society, on the 19th December, 1834.

BY

GEORGE ORD.

---

THOMAS SAY was born in Philadelphia, on the 27th of July, 1787. His father, Benjamin Say, a respectable physician and apothecary, was a son of the Thomas Say, of whom a marvellous account is extant, relating to a supposed trance, during a state of suspended animation.

Dr. Say, belonging to the Society of Friends or Quakers, placed the subject of this notice in a school, under the patronage of the sect; and afterwards removed him to the Friends' Academy of Weston or West-town, situated in Pennsylvania, a few miles from Philadelphia.

Of those who have had the misfortune to be placed at a country school, there are few, who, in after years, can review that period of their life with satisfaction. The grovelling amusements there indulged in, which are the natural consequence of a freedom from restraint, or from observation; the want of incentives to honourable emulation; together with an unsettled mode of communicating elementary knowledge; occasion in the mind of the pupil a distaste for letters, which too often influences the remainder of his life.

Of the name or character of the teachers, to whom the education of Thomas Say was confided, I have not been informed ; but there is reason to infer, from his deficiency in elementary learning, on his arriving at manhood, and his indifference to polite literature, that his teachers had been either grossly negligent or incompetent.

The father of Mr. Say, aware of the importance of occupation, and not perceiving in his son an indication of a predilection for any of the learned professions, took him into his shop, the business of which was conducted for their mutual benefit. After being initiated into the mysteries of pharmacy, Mr. Say was established in the same useful calling, in conjunction with another person, whose supposed solidity of character, and business habits, it was presumed would ensure success.

But the expectations of the parent were not to be realized. Thomas Say was not destined to be a man of business. The thrift of trade, and the art of buying and selling, were either disdained by him or neglected. He became imprudently responsible for the pecuniary engagements of others ; and being unable to withstand the reverses which ensued, he soon found himself involved in ruin.

At what period of Mr. Say's life he became enamoured of the works of nature I cannot ascertain ; but I remember his

become an occupation, interfering with the acquisition of that learning, which, in every situation of life, is deemed indispensable.

That the subject of this notice early commenced the study of natural history, is well ascertained. Hence his indifference to business, which resulted in bankruptcy; hence his neglect of literature, a neglect which he was fully sensible of, when, at a future period of his life, he undertook to communicate to the public the result of his labours in some of the most abstruse and intricate branches of the animal kingdom.

Not long after the establishment of the Academy of Natural Sciences of Philadelphia, Mr. Say was prevailed with to become one of its members.\* Of the origin of this highly respectable and useful institution, I shall at this time merely assert, that its founders had any thing in view but the advancement of science. Strange as this may appear, it is nevertheless true, that the club of humourists, which subsequently dignified the association under the imposing title of Academy, held its weekly meetings merely for the purpose of amusement; and, consequently, confined itself to those objects which it was thought would be most conducive to that end.

But, in process of time, when it was found that mere colloquial recreation soon loses its charms, a higher object was suggested to the attention of the association, one which it was thought would tend to awaken public curiosity, and thereby procure an accession of members, and, consequently, an accession of means: this object was the collecting and preserving of natural curiosities. At the date of Mr. Say's joining the Society, this plan had been recently adopted; but how great was his surprise, on being inducted into the temple of science, to find that the whole collection consisted of some half a dozen common insects, a few madrepores and


\* The Academy was founded in January, 1812; and Mr. Say was elected a member in April, the same year. His name appears for the first time, among the members present, at the meeting of the 16th of April. It was subsequently determined, as a mark of respect, that "his name should be enrolled among those of the founders."

shells, a dried toad fish and a stuffed monkey : a display of objects of science calculated rather to excite merriment than to procure respect, but which, in the end, proved to be the nucleus of one of the most beautiful and valuable collections in the United States.

In the year 1817, the Academy of Natural Sciences, having had the good fortune to associate to itself some gentlemen of acquirements and respectability, was induced, at the earnest solicitation of its President, William Maclure, Esq., to undertake the publication of a Journal, chiefly for the purpose of recording discoveries, remarkable facts, and observations, in natural history. This Journal, which, at the date of this memoir\*, has reached its thirteenth half volume, is a record of no ordinary value ; and we hazard nothing in predicting that it is destined to a long life.

In the Academy's Journal Mr. Say, I believe, first made his appearance as an author. He had, previously, read some papers to the Society, more with a view of adding interest to its meetings, than of giving publicity to his discoveries ; but now that an appropriate vehicle of publication was afforded him, he devoted himself with increased ardour to his pursuits, with what success those only who are conversant in these matters can truly estimate.

We have spoken of Mr. Say's first appearance in print.



Florida, then under the dominion of Spain, for the purpose of studying the natural history of those interesting regions.\* This journey, although productive of much valuable information, was shortened, in consequence of the hostilities which still existed between the people of the United States and the native tribes of Florida; the Spanish Governor of which territory having kindly advised the exploring party to return, as it would not be in his power to afford them any assistance, in the event of an attack by the Indians.

Of the two scientific expeditions fitted out by order of the government of the United States, and commanded by Major Long, the department of chief Zoologist was allotted to Mr. Say; whose numerous discoveries have since been recorded in works which need not be named here, as the students of natural history are familiar with them.

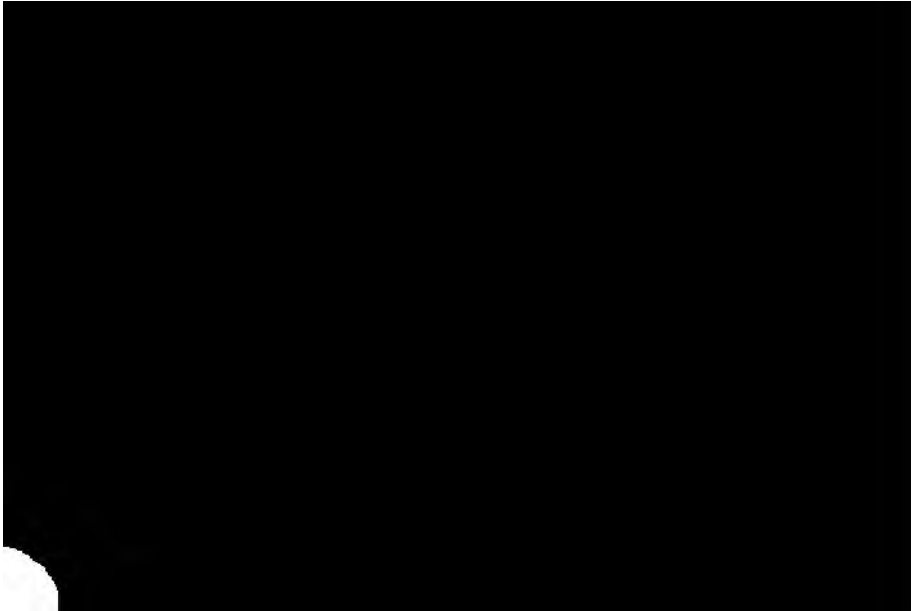
We come now to the crisis of Mr. Say's life, the termination of his labours in his native city. In the year 1825, he was induced to accompany Messieurs Maclure and Owen to their settlement in Indiana, where the sum of human happiness, it was believed, would be exalted; and where science and letters, it was confidently affirmed, would soon arise, like the orient sun, to enlighten our benighted western world. But had these zealots allowed themselves time to reflect upon the nature of man, before they commenced their plans of reform, they would have perceived that all schemes to counteract the order of society are as ineffective as attempts would be to subvert the order of nature. This truth soon became manifest, for in a few short months the confraternity of New Harmony disagreed, quarrelled, and separated. Even the founders of the Institution got into the labyrinth of the law, from which they were extricated by a compromise. One returned to his native country, to concoct new measures for the reformation of domestic policy; and the other retired in disgust to the republic of Mexico, to brood over

\* The party consisted of Messrs. Maclure, Say, Titian R. Peale, and the writer of this memoir.

misfortunes, which he attributed rather to adverse events, than to a want of forecast in himself, or a defect in the fundamental principles of the association.

But Mr. Say had become involved for life. He had married; he had accepted the agency of the property, the duties of which compelled him to a residence there; he had no other means of support but what the bounty of his patron, Mr. Maclure, afforded him; he, therefore, sat himself down with his usual composure, to await the turn of events, appropriating all his moments of leisure to his favourite pursuits; and not allowing a thought of the future to disturb the equanimity of his mind.

The health of Mr. Say, when he retired from Philadelphia, was far from being good; from causes which shall be hereafter stated, his stomach had lost its natural tone; and he found that the climate of the Wabash was by no means adapted to restore vigour to a constitution which had been enfeebled by the repeated attacks of dysenteric affections. Had he been free to follow the advice of his medical friends, or to yield to the affectionate solicitations of his relations, he would have returned to the more genial climate of his native city; where the salubrity of the air, the comforts of life, and the charms of society, would have doubtless contributed, in no small degree, if not to the entire renovation of



the most beautiful publication of the kind which has ever been issued from the American press. It is illustrated with well executed plates, coloured from nature ; which plates, in conjunction with the descriptions, leave nothing to be desired on the score of certainty as regards species. The publisher of this work, at whose request it was undertaken, Mr. Samuel Augustus Mitchell, was resolved that no exertion should be spared, on his part, to render the book as acceptable to the lovers of the fine arts, as useful to the student of nature; and that he fully succeeded will not admit of a doubt. The author, delighted that his labours should be presented to the public in so attractive a garb, felt himself stimulated to extraordinary exertions ; hence, the American Entomology may be considered as a fair specimen of Mr. Say's talents as a writer and as a naturalist. This work, published in Philadelphia, was advanced no farther than the second volume, at the time of the author's departure for Indiana. One more volume, three years afterwards, appeared, and the publication was stopped. Whether this termination arose from the difficulty of conferring with the author, in matters which required his presence and frequent communication, or from the want of the patronage of the public, I am unable to determine ; but I am induced to believe that both these causes conspired to frustrate the completion of a work, which may be advantageously compared with those of a similar nature which have been produced in other countries.

His " American Conchology," only six numbers of which had been issued at the date of his death, was printed and published at New Harmony. From the knowledge and skill of Mr. Say's intelligent wife, in natural history drawing, he derived no small advantage, as all the illustrations were the product of her pencil ; we, consequently, are indebted to her taste for the only attraction which the work possesses—the plates ; for I am sorry to be compelled to add, that the paper and letter-press are a disgrace to the arts of our country. A book possessing such repulsive cha-

racters could hardly hope for general encouragement; more especially as works merely conchological, that is, without a history and description of the singular animals which form and inhabit the shells, can have little claim to the favour of the public, except what is derived from their extrinsic qualities.

Of our author's numerous Papers, which are recorded in the Journal of the Academy of Natural Sciences, the Transactions of the American Philosophical Society, and some scientific periodicals, a variety of opinions are entertained; some persons maintaining that, as they are chiefly descriptive, more care ought to have been exercised in discriminating character; especially as, from the want of plates, the insufficiency of our author's technical phraseology may lead to confusion or doubt. That there is much uncertainty in some of his descriptions of Insects, I was well assured by one whose judgment in these matters was of no small weight;—the late learned French Entomologist, M. Latreille, one of the professors of the Museum of the Garden of Plants, at Paris; who, after expressing a high opinion of Mr. Say's acquirements, added, that it was to be regretted his Papers had not been illustrated with plates, as there was ambiguity in some of his descriptions, which figures might tend to solve.\*



ral history require, is much greater than what is commonly imagined; and the difficulty of accurately distinguishing specific characters is known only to those who are familiar with these matters. "Specific characters," says Willdenow, "to be perfect, must be common to no other of the genus." It hence follows, that the describer's knowledge must not only be positive but relative, as no one can define systematically, without knowing what are the characteristics of other species of the same genus.

This difficulty was probably the cause of the want of technical precision above referred to; as from Mr. Say's anxiety to prepare some of his papers for the press, in order to secure the honour of discovery, he did not allow himself that time in their composition which, from their nature, they required.

With respect to the literary part of Mr. Say's labours, it has been conjectured that posterity will not award him that praise to which his talents and zeal should seem to entitle him. No natural historian can reasonably expect durable celebrity, without having established his reputation upon the foundation of polite learning. The ponderous tomes of the elder naturalists of Europe, sought after, not for their intrinsic value, but for their rarity, lie neglected in some obscure nook of our libraries; their erudite authors, disdainng a sacrifice to the Muses, received no inspiration from the sacred mount, and they are fast passing into oblivion. Whereas Buffon, whose acquirements in some branches of natural history were so very slender, that many writers refuse to admit his authority, has, nevertheless, erected a monument to the glory of the French language more durable than brass or marble. Where is the English student who has not refreshed his mind with the graphical descriptions, and the chaste language, of the "Animated Nature" of Goldsmith, although it is well known that this illustrious writer had little knowledge of natural history, except what was derived from books.

Had our lamented friend not misemployed his youth, he

might have acquired a taste for classical literature, which would not only have tended to increase his influence in society, but which would have furnished him with the means of usefulness, proportioned to the extent and variety of his acquirements in natural knowledge. But he appeared not to have been fully sensible of his deficiency until it was too late to supply it. As it is the nature of a favourite occupation, long continued, to absorb the attention, to the exclusion of other pursuits, so Mr. Say's passion for discoveries became so predominant, that any attempt to change his habits of thinking would have proved as vain as efforts to control the natural affections of his heart.

There are two classes of readers to whom the major part of writers on zoology, of the present day, address themselves: the reader for pastime, and the scientific naturalist. Now that it is possible to conciliate the good opinion of both these classes, is proved by the success of some publications of recent date, in which strict attention has been paid to nomenclature, arrangement and definition, and in which the habits of the animals have been detailed with all the fidelity of truth, and in all the charms of diction.

That even in works on Entomology these two objects are not incompatible, the most indifferent observer of those insects, with which we are familiar, must be fully sensible of; for who that takes the pains to note the industry and economy

who affect to consider the time spent in the acquisition of words as worse than useless, that precisely in proportion to the augmentation of our vocabulary, and our phraseology, do we enlarge our stores of ideas, and acquire a facility in communicating them.

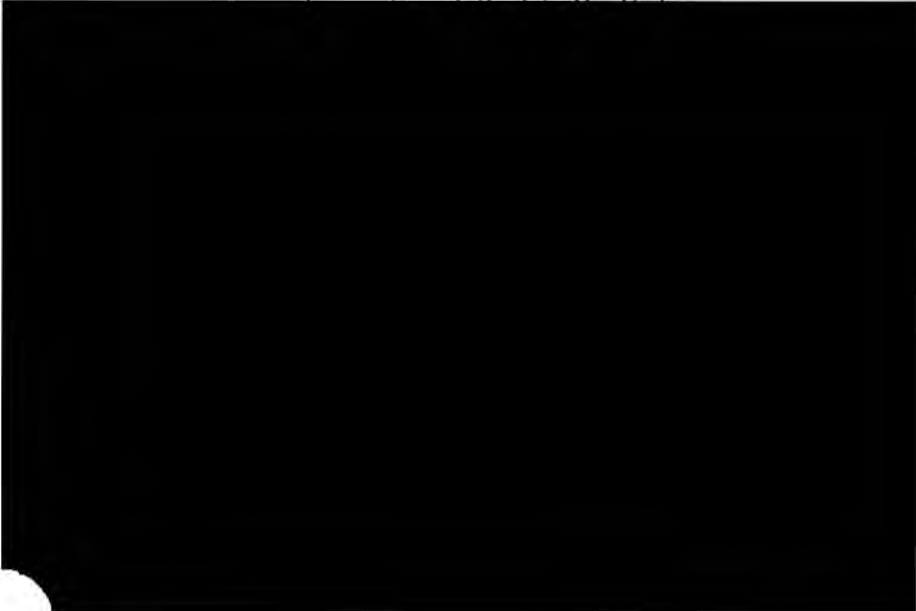
The aid which language affords, in the development of ideas, has not been sufficiently attended to by those writers who have made the operations of the human mind the subject of their meditations. "Rien ne marque mieux un esprit juste et droit," says Voltaire, "que de s'exprimer clairement. Les expressions ne sont confuses que quand les idées le sont." The practice of this great writer will convince us, that he who has a store of language must be rich in ideas, and that *that* thought is seldom confused which can call to its aid a conformity of diction, or a facility of expression.

There is an opinion prevalent among the gross of readers, that clearness of phraseology demands no extraordinary effort of the intellect; and that if writers would be satisfied with clothing their thoughts in simple language, the labours of authorship would be greatly diminished. It would be a difficult matter to convince such thinkers, that the easy, graceful diction, which appears to flow spontaneously from the mind, is, in effect, one of its hardest attainments; it is the result of continued application, under the control of taste and judgment: it is one of the noblest triumphs of art. One would suppose that Addison wrote his *Spectators* *currente calamo*, and that the *Ramblers* of Johnson were the purchase of toil and research; whereas the truth appears to be, that the former owe their perfection to the repeated labour of revision, and that the latter were the product of moments which neither admitted of reflection nor delay.

These observations, apparently out of place, will not be thought irrelevant to our subject when we state that Mr. Say maintained the opinion above mentioned. That he was self-deceived, would be evident from a glance at his own writings; for where he fancied his expression to be most clear, there frequently is the greatest obscurity; and where

he thought he was confining himself to a simple declaration of facts, the diction he employs is so turgid or pleonastic, that one would almost be tempted to believe he esteemed facts of less importance than the cadence of a period.\*

During the latter part of Mr. Say's residence in Philadelphia, he had duties to perform besides those which appertained to his own pursuits. Charles Lucien Bonaparte, Prince of Musignano, wishing to communicate to the public some observations on certain subjects of natural history, and critical remarks upon the Ornithology of Wilson, sought the assistance of Mr. Say, who cheerfully granted it; hence all those papers to which the name of Charles Bonaparte is attached, in the Journal of the Academy of Natural Sciences, were corrected and arranged for publication by Mr. Say; whose task was troublesome, inasmuch as it is less difficult to compose entirely from materials furnished by another, than to place into form the crude language of one but partially acquainted with the idiom of our tongue. Mr. Say, also, was employed by the Prince of Musignano to prepare for the press his first volume of "The Natural History of Birds inhabiting the United States," in continuation of Wilson's American Ornithology. This volume, subsequently, for reasons which need not be here stated, underwent the



he soon became sensible, by the derangement of his digestive organs, which resulted in dysenteric affections, that, probably, were the remote cause of the illness which carried him to the grave.

Another cause of indisposition, if not of disease, may have been those habits of rigid abstemiousness, to which Mr. Say addicted himself after his retirement to New Harmony. The maxim of Seneca, that "We have a sufficiency when we have what nature requires," how just soever in itself, may, nevertheless, lead to harm, if we fail to inquire what are the requisitions of nature, and if we neglect to supply them. That the abstinence of Mr. Say, and his prototype, Mr. Maclure, was carried to an injurious excess, we may safely infer from the fact, that the expenditure for the daily food of each, for a considerable time, amounted to no more than the sum of *six cents*.\*

Although on the score of Mr. Say's literary acquirements there may be a diversity of opinion, yet there can be but one sentiment with regard to his industry, his zeal, and the extent of his knowledge of natural history, particularly of that class of zoology to which he was most attached, Entomology. His discoveries of new species of insects were, perhaps, greater than ever had been made by a single individual, and it is to be regretted that many of them yet remain in his cabinet undescribed.† The naturalists of Europe, fully sensible of his rare qualifications, were not

\* This singular fact I had from Mr. Maclure's own letters. The folly of some men, reputed philosophers, is sometimes very striking. Seneca maintained that a little bread and water was all that nature required; as to clothes and lodging, says he, we may cover ourselves with the skins of beasts, and with a few ozers and a little clay we may defend ourselves against the vicissitudes of the weather. But did this illustrious moralist exemplify his own precepts? Hear him: "If I do not live as I preach, take notice, that I do not speak of myself, but of virtue." Of what utility is theory without practice? On this head our New Harmony philosophers were more consistent than the preceptor of Nero, for they really enforced their own doctrines by their example.

† This cabinet has been since entirely destroyed.

backward in acknowledging his merits, for we find his name in the noble list of Foreign Members of the Linnean Society of London, and that of the Zoological Society of the same capital; an enviable distinction, which our countryman must have justly valued, when he reflected that the former is restricted to the number of fifty, and the latter to five-and-twenty.

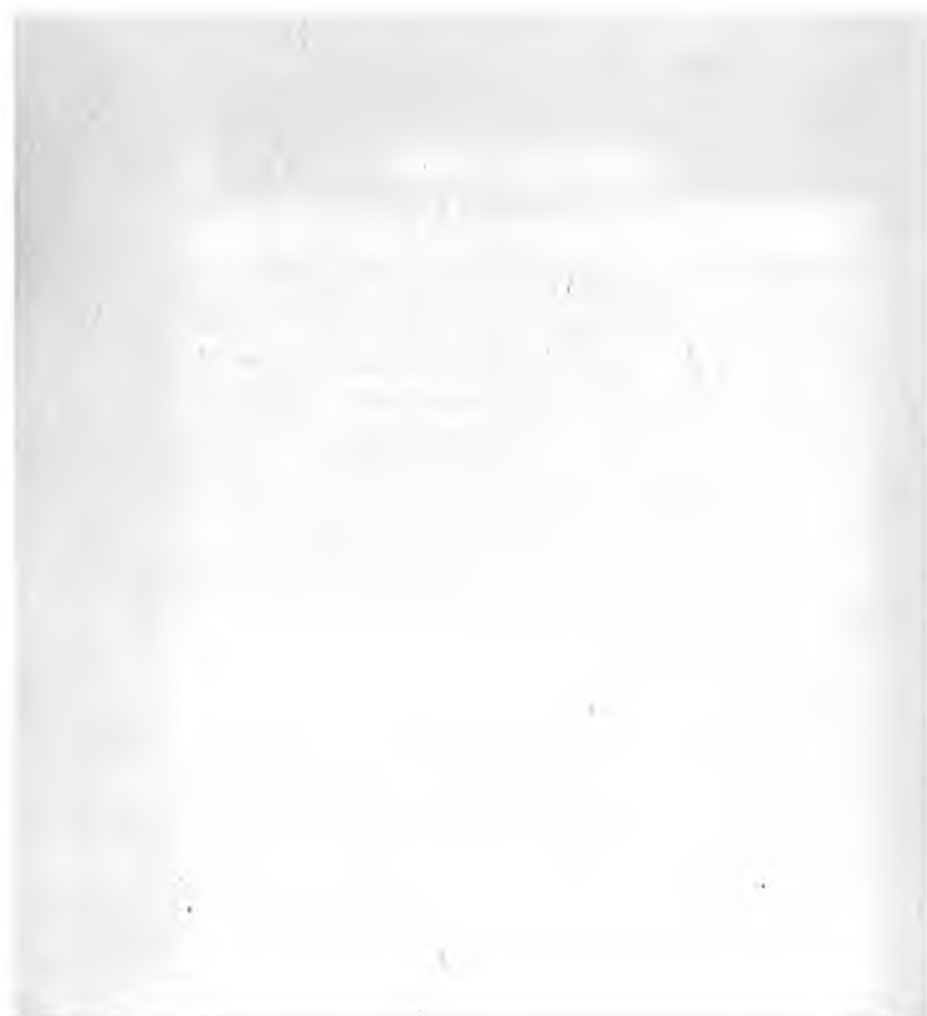
We have merely noted, in a cursory way, Mr. Say's industry and zeal; details would be superfluous, as the variety and extent of his labours amply testify to these points.

Of his moral character we are now to speak, but so many delightful recollections rush forward at once, that we hardly know which has the claim to precedence. Those who had the best opportunities of knowing him, his venerable mother,\* and his affectionate sister, speak in such unqualified terms of his domestic virtues, that his value as a son and a brother must have been beyond all eulogy. His disposition was so truly amiable, his manners were so bland and conciliating, that no one, after having once formed his acquaintance, could cease to esteem him. A remarkable feature in his character was his modesty, which, leading to habits of retirement, in some respects unfitted him for the intercourse of society, except that of his private friends, where, it may be said, he was

beneficial results, as, being always open to conviction, he readily yielded to the advice of those of his friends in whose judgment, in literary matters, he placed reliance.

Conscious of rectitude himself, ingenuous and sincere, whenever he fancied he perceived either artifice or dissimulation in any person, his aversion was prompt and decisive; and yet, in that useful talent which enables one readily to discriminate human character, that *tact* by which we can read the soul, as it were, in the countenance, he was so singularly deficient, that the most barefaced impostor, with a knowledge of the bias of his mind, would find no difficulty in securing his confidence.

This imperfect sketch of our deceased member would be wanting in two essential particulars, were I to omit a distinct enforcement of his integrity, and his love of veracity. These noble virtues, indispensable in every condition of human life, especially to those who devote themselves to the study of nature, were so firmly established within his mind, so entirely did they control his actions, that, with all those who had the happiness of his acquaintance, the name of Thomas Say was synonymous with honour, and his word the expression of truth.





## PREFACE TO AMERICAN ENTOMOLOGY.\*

The author's design, in the present work, is to exemplify the genera and species of the insects of the United States, by means of colored engravings. He enters upon the task without any expectation of pecuniary remuneration, and fully aware of the many obstacles by which he must inevitably be opposed.

The graphic execution of the work will exhibit the present state of the arts in this country, as applied to this particular department of natural science, as no attention will be wanting, in this respect, to render the work worthy of the encouragement of the few who have devoted a portion of their attention to animated nature.

To such persons, as well as to those whose information is sufficiently comprehensive to enable them duly to appreciate the various departments of human knowledge, this book is more especially addressed; and the author would happily profit by their friendly co-operation in the correction of any errors that may appear, in the enunciation of new facts in the manners and economy of insects, or in the addition of species and localities.

It is not possible, in the present state of our collections, to publish all the species in regular systematic succession; and the Entomologist will therefore observe, that although the specimens are somewhat indiscriminately described and

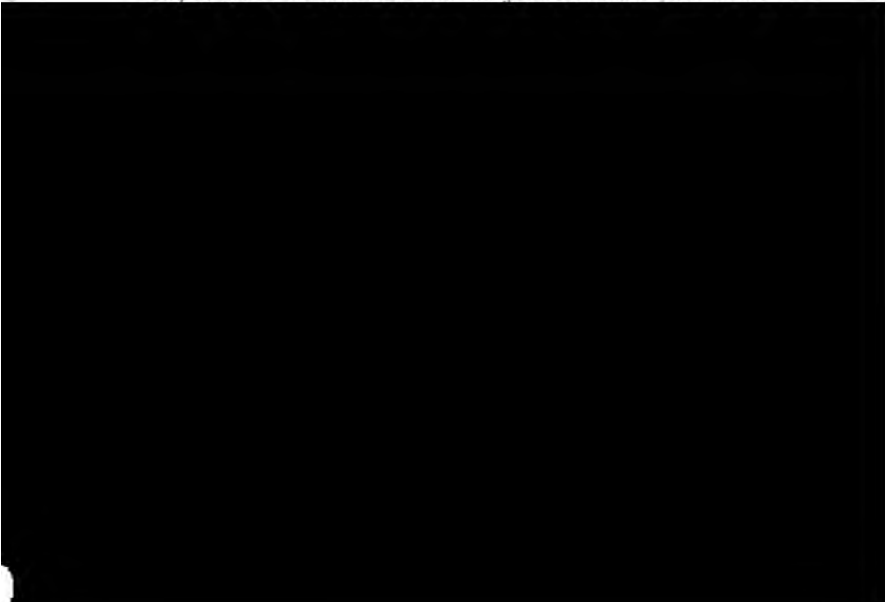
\* The dedication of this work is as follows: To WILLIAM MACLEURE, President of the Academy of Natural Sciences of Philadelphia, and of the American Geological Society, Member of the American Philosophical Society, &c. &c., distinguished as a successful cultivator, and munificent patron, of the Natural Sciences, this work is respectfully inscribed, by his much obliged and most obedient servant, THE AUTHOR.

figured, yet care has been taken that species of different genera be not represented in the same plate. The pages are not numbered, and the enumeration of the plates, which is on the inferior margin of the impression, is referred to beneath the text. This arrangement will admit of the work being bound up, when completed, agreeably to systematic order in the succession of genera, without any apparent confusion of numerals.

In order that the descriptions may be understood by those who are not conversant with the science, we subjoin an explanation of the technical terms used in Entomology, illustrated by elementary plates.

Six plates of the present volume, together with their accompanying text, were printed off in the year 1817, but as they were never properly published, it has been thought advisable to include them in the present work.

With these preliminary notices, the first volume of the American Entomology is submitted to the patrons of science : and whatever may be its merits or its defects, we must observe, that it is the first attempt of its kind in this country. It is an enterprise that may be compared to that of a pioneer or early settler in a strange land, whose office it is to become acquainted with the various productions exhibited to his view, in order to select such as may be beneficial, either as re-



# AMERICAN ENTOMOLOGY.

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## PAPILIO. PLATE I.

*Generic Character.* Antennæ terminating in a conic-ovate or elongate-ovate, somewhat arquated club; palpi pressed closely to the front, hardly reaching the clypeus, the terminal joint obsolete or very minute; feet all formed for walking, armed with simple claws at tip; superior wings somewhat falcate; inferior wings often tailed at tip, and on the inner margin excised or folded to admit of the free motion of the abdomen.

*Obs.* The Caterpillars in this genus are destitute of a hairy or spiny armature; but, when disturbed, they suddenly project from the anterior and superior part of the neck a soft bifid appendage, which diffuses a strong odor. This singular organ, although somewhat formidable in appearance, is yet perfectly harmless; it may, however, serve the purpose of repelling the enemies of the larva, rather, perhaps, by the odor it emits, than by its menacing aspect.

The pupæ or chrysalids are, for the most part, of an angulated form, with two processes or lobes before; they are secured in an upright position by a silken thread, which passes transversely around the body.

The perfect insects are considered by many observers as the most beautiful part of the creation.

PAPILIO PHILENOR Fabr.—*Specific character.* Wings tailed, green-black; posterior pair green, polished, with seven fulvous subocellar spots beneath.

*Papilio Astinous* Drury, vol. i. tab. 11, fig. 1, 4. Cramer, Ins. tab. 208, fig. A, B.

*P. Philenor* Fabricius, and of Smith and Abbot's Insects of Georgia.

*Desc.* Head black; eyes red-brown, posterior orbits yellow;

palpi yellowish before ; a white dot behind the base of each antenna ; neck with two dots before, and a band of four dots behind.

Thorax black, immaculate ; breast dotted with yellow ; feet black, anterior trochanters with an obsolete yellow dot ; superior wings dark green, sometimes blackish, with whitish crenæ ; four or five white spots on the margin, more conspicuous beneath, often obsolete above ; inferior wings highly polished, green ; six pearl-white spots before the margin ; crenæ white ; beneath with a yellow spot at base, brownish, with a very broad polished green border, upon which are seven large fulvous spots, each surrounded by a black ring, and marked by a lateral white spot ; on the inner edge about six small white dots.

Abdomen green, a little brassy above ; a lateral double row of whitish dots ; first segment with a single larger spot conspicuous above.

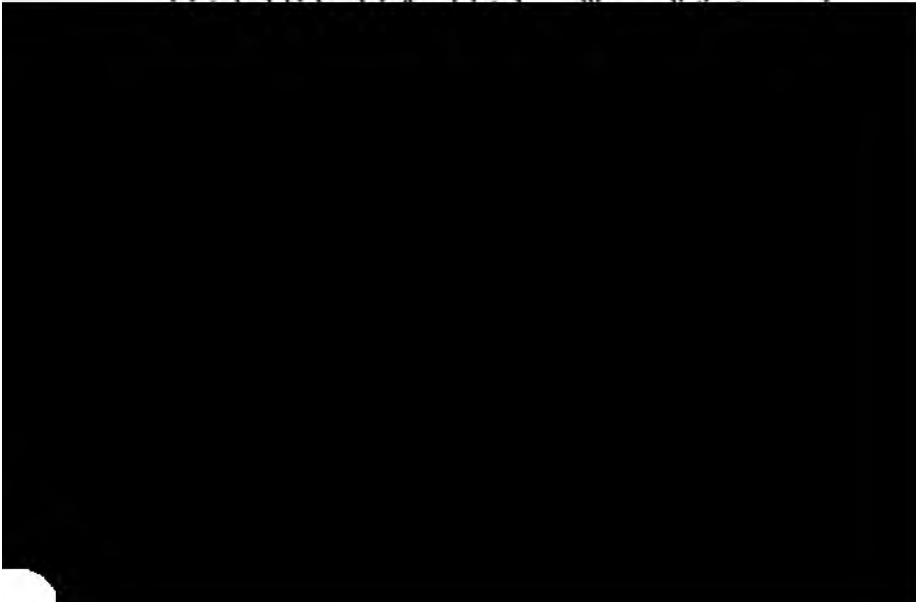
Female larger, color of the wings brown, with cupreous reflections.

The *Philenor* is one of the most beautiful of our butterflies, and is, at the same time, very common.

The plate represents the male in two positions.

#### STIZUS. PLATE II.

*Generic character.* Thorax with the first segment transverse linear ; feet short or moderately long ; labrum entirely exerted, short, semicircular : palpi filiform, maxillary ones longer, six-



*Bembex*, in the general appearance of the insects of which it is composed, as well as in the distribution of the nervures of their wings. This affinity is so striking in many species of these groups, that it becomes necessary to inspect the form of the labrum, in order to decide upon their respective appropriate genus. A very remarkable difference is observable in this organ, which, in those genera, is much elongated and triangular, but in *Stizus*, it is short and semiorbicular. Nearly all the species have three spines at the extremity of the abdomen, as in the genus *Scolia*, but they cannot be considered as *Scolia*, as their eyes are entire, and the form and number of the wing cellules are altogether different.

*STIZUS GRANDIS*.—*Specific character*. Segments of the abdomen, each with a yellow band, and lateral blackish spot.

*Stizus grandis nobis*, *Western Quarterly Reporter*, vol. ii. p. 77.

*Desc.* Antennæ black, the three basal joints rufous; front and labrum yellowish; thorax with a yellowish spot on the anterior angle, and first segment margined with yellowish; scutel ferruginous; wings ferruginous, dusky at tip; feet ferruginous; tergum ferruginous, each segment with a yellow band, and lateral, blackish, oblique, sublinear spot; venter with an obsolete margin on the second segment, and obsolete lateral triangles on the remaining segments, yellowish.

*Male*. Head, thorax, base of the three or four terminal, and of the abdominal segments, and beneath, black; bands of the abdomen uninterrupted; lateral spot of the first band obsolete or wanting; anal spines none. Length to the tip of the wings, one inch and a fifth.

*Female*. Ferruginous; basal band of the abdomen, and sometimes the second and third bands, interrupted in the middle; lateral spot of the first abdominal band very oblique. Length to the tip of the wings, one inch and three fifths.

*Obs.* This remarkably fine and new species is very distinct from the *speciosus* of Drury, and is somewhat larger than that common insect. When descending along the bank of the Arkansas river, with a detachment of Major Long's exploring party, I had frequent opportunities of observing this species. It generally occurred upon flowers, in company with many other interesting *Hymenopterous* insects. It is highly probable, that, like the

*speciosus*, the *grandis* nidificates in the earth, and feeds its larvæ with the dead bodies of *Cicadæ*.

The *speciosus*, *grandis*, and a few other large species, ought to constitute a distinct division in this genus, distinguished by the want of spines at the tail of the male.

The upper figure represents the female, and the lower left figure the male, both of the natural size.

*STIZUS UNICINCTUS*.—*Specific character*. Black, opaque; abdomen polished, with a rufous band above; wings dark violaceous.

*Stizus uncinatus nobis*, Western Quarterly Reporter, vol. i. p. 77.

*Obs.* A broad, bright rufous band occupies the basal half of the second segment of the tergum. The wings are blackish-violaceous, and the anal spines are prominent. The length of the male is half an inch.

This species occurred on the banks of the Arkansa river, in company with the preceding insect.

The lower right figure magnified, and beneath is an outline showing the natural size.

#### LYTTA. PLATE III.

*Generic character*. Tarsi entire; nails bifid: head not produced into a rostrum; elytra flexible, covering the whole abdomen, linear, semicylindric; wings perfect; maxillæ with two membranaceous lacinix, the external one acute within, subuncinate; an-

the practice of medicine; and it is certain that a sufficient quantity may be collected in the United States to supply the demand of the shops, to the complete exclusion of the foreign insect.

*LYTTA NUTTALLI*.—*Specific character*. Bright green, varied with golden; elytra golden purple; feet black, thighs blue, trochanters armed with a spine.

*L. Nuttalli* nobis, Jour. Acad. Nat. Sciences, vol. iii. p. 300.

*Desc.* Body glabrous: head deep greenish, varied with golden; front punctured, subimpressed, and with a small rufous spot; antennæ robust, surpassing the base of the thorax, black, opaque: joints turbinate, approaching to moniliform, the margin of the tip rounded; second joint two-thirds the length of the third; terminal joints largest near the middle, and rapidly attenuated to an acute tip: eyes oblong-oval, emarginate: palpi black: clypeus and labrum obscure: thorax golden-green, polished, with unequal, minute, sparse punctures: a longitudinal, dorsal, impressed line, and a transverse basal one; base bluish, anterior angles prominent: scutel blue, obtuse behind: elytra red, or golden-purple, somewhat rugose: two indistinct elevated lines on the disk, and a submarginal one: beneath green, polished: feet black; thighs beneath blue or purplish; trochanters armed with a conic spine near the inner base, obsolete or wanting in the female.

*Obs.* This noble species, which in magnitude and splendor surpasses the far-famed *vesicatoria*, has, I understand, been labelled in a British cabinet with the name which I have here adopted, in honor of Mr. Thomas Nuttall, who discovered it.

Although this insect certainly belongs to this genus, yet the proportional length, of the second and third joints of the antennæ, is somewhat similar to that of the genus *Zonitis*, as defined by Latreille in the Regne Animal. In common with several other American species, the antennæ increase a little in thickness towards the tip, but are much shorter than in *Zonitis*. These characters, combined with the form of the terminal joint, seem to prove a close alliance with the genus *Mylabris*, but the antennæ are not arquated at tip, and are of a more considerable length; the habit also differs, the form of the body being more elongated. The species, then, possessing the form of antennæ above noted,

seem to have the habit of *Lytta*, combined with a form of antennæ allied to that of *Mylabris*.

They cannot be referred to *Zonitis*, as the palpi are not filiform, and the habit does not agree.

The *Nuttallii* seems to be limited to the western region. In company with Major Long, I observed it, for the first time, near the base of the Rocky Mountains. A very numerous flock had there taken possession of the few diminutive bushes that occurred within the space of a hundred yards, every spray of which was burdened with their numbers. After passing this limited district, not an individual was seen during the remainder of our journey. On the recent expedition of the same officer to the river St. Peter, I obtained but a single specimen, which was found one evening at an encampment in the North West Territory.

The upper left figure, natural size.

LYTTA ALBIDA.—*Specific character.* Black, covered with dense whitish hair.

*L. albida nobis*, Jour. Acad. Nat. Sciences, vol. iii. p. 305.

*Desc.* Body black, entirely covered by dense, short, prostrate greenish or yellowish-white hairs; head with a longitudinal impressed line; antennæ subglabrous; first and second joints rufous, the latter nearly equal in length to the third joint; clypeus, labrum, and palpi pale rufous; tarsi black.

*Obs.* Another remarkably fine species, which I discovered within about a hundred miles of the Rocky Mountains, during the progress of Major Long's expedition over that vast desert.



and behind the insertion of the maxillæ; thorax subquadrate, narrower than the head, a longitudinal impressed line, and a transverse basal one; elytra with numerous orbicular, black dots, irregularly placed, sometimes confluent, and are the effect of the absence in those parts of the cinereous hair; tarsi, tips of the tibia and thighs glabrous.

*Obs.* This insect is much smaller than the preceding ones, and the spots of the elytra distinguish it in a remarkable manner. Numerous specimens were brought by Mr. Nuttall from Missouri.

The lower left figure; the line represents the natural length.

LYTTA SPHÆRICOLLIS.—*Specific character.* Dark green, tinged with brassy; thorax rounded, convex.

*L. sphericollis nobis*, Jour. Acad. Nat. Sci., vol. iii. p. 299.

*Desc.* Body glabrous, blackish-green, slightly tinged with brassy; head punctured; antennæ robust, black, hardly attaining the base of the thorax; joints short, conic, acute at the edge of the tip; second joint rufous, subglobular; eyes oval, not elongated; labrum and palpi blackish; thorax subglobular, punctured, punctures sparse, not profound; elytra green, slightly tinged with olivaceous and brassy, somewhat rugose; two, rarely three, obsolete longitudinal lines on the disk, and another near the external margin; beneath blackish-green.

Variety, *a.* Body green, destitute of the brassy tinge.

Variety, *b.* Head and thorax black; elytra bluish.

*Obs.* This species is less robust than the preceding, and may be readily distinguished from others by the rounded thorax and very short antennæ, the remaining characters of which latter agree with those of the *Nuttalli*. Many specimens were brought from Missouri by Mr. Nuttall.

In a future volume of this work, we propose to give some account of the American species of this genus, as related to medicine.

The lower right figure; the line shows the natural length.

#### SCARABÆUS. PLATE IV.

*Generic character.* Antennæ ten-jointed, the club composed of oblong-oval lamellæ, which have an almost common insertion; body ovoid, convex; mandibles with their external edge crenu-

lated; maxillæ corneous, dentated; labrum entirely concealed; palpi filiform.

*Obs.* The genus possessed of the above characters, retains the Linnæan name of *Scarabæus* in the system of Latreille, and corresponds with the genus *Geotrupes* of Fabricius; whilst the genus *Scarabæus* of the latter author, is the same with *Geotrupes* of Latreille. Although, in the small portion of the present work, printed in the year 1817, I adopted the Fabrician designation, yet, as Entomologists have generally chosen Latreille's nomenclature in this respect, I have thought it necessary to acquiesce in their decision.

This genus comprehends some of the largest insects of the order *Coleoptera*, and, amongst others, the noble species known by the name of *S. Hercules*, of which the truly absurd story has been related of its clasping a branch of a tree between the corneous projections of the head and thorax, and by flying around the limb thus included, finally succeeds in separating it from the tree; and that the insect then becoming inebriated with the fluid that exudes from the wound, falls apparently lifeless to the ground.

**SCARABÆUS TITYUS** Linn.—*Specific character.* Thorax three-horned, the lateral ones short, subulate; middle one bearded with yellow hair beneath, projected forwards, and bifid at tip; horn of the head recurved, submarginate, on the back near the tip.

*Scarab. Tityus* Linn. Syst. Nat.

in which the appearance of a considerable number of them occasioned no little surprise in the neighborhood where they were discovered. A mile or two southward of Philadelphia, and near the river Delaware, an old cherry-tree was blown down by a violent current of wind, and my informant saw the remains of numerous individuals, in and about a cavity of the tree, laid open by the shock of its fall. That there might be no mistake as to the species, he exhibited the thorax of a male he had chosen from the mutilated fragments.

I think it highly probable that the *Tityus* is more especially a native of the Southern States, as my friend, Mr. J. Gilliams, presented me with several specimens in high perfection, collected by himself in Maryland; and from these, the drawings for the annexed plate were made.

The length of the male, exclusive of the horns, is two inches, and the greatest breadth one inch. In color it resembles the *S. Hercules*, being glaucous with brown spots, or brown with glaucous spots. These spots vary considerably in size, figure, position and number, being sometimes confluent, and exhibiting a clouded appearance. The elytra of one specimen in my collection are entirely chestnut-brown, immaculate, and the larger thoracic horn frequently occurs simple or undivided at tip, as exhibited in the figures given by Jablousky and Olivier; to the latter author we are indebted for a knowledge of the specific identity of the *Tityus* and *marianus*.

The female is generally somewhat smaller than the male, and unarmed, except a small tubercle on the head.

*Tityus* in the heathen mythology, was a gigantic son of Jupiter and Elara, whom Apollo killed for offering violence to his mother Latona.

The upper figure of the plate represents the male, and the lower the female.

[This species belongs to the genus *Dynastes* M'Leay.—LEC.]

#### ACRYDIUM. PLATE V.

*Generic character.* Thorax elongated behind, often longer than the abdomen; elytra very small; pectus with a cavity for the reception of the inferior part of the head; tarsi three-jointed, destitute of pulvilli; antennæ thirteen or fourteen jointed, not half the length of the body; oviduct not exerted; posterior feet formed for leaping.

*Obs.* This genus was established by Fabricius under the name which, with Thunberg, I have adopted. Linné included the species in his genus *Gryllus*. Lamarck distinguished them by the name of *Acheta*, and Latreille by that of *Tetrix*. The species are nearly all small, and several are common. They may be very readily distinguished from "grasshoppers" of other genera, by the remarkable elongation of the thorax, which is continued backward so as to cover the abdomen wholly or in great part.

ACRYDIUM ORNATUM.—*Specific character.* Whitish; beneath fuscous; thorax nearly as long as the wings, spotted with black.

*Desc.* Head blackish; vertex with an elevated longitudinal line, which extends down over the front where it is grooved, but this groove does not reach the acute ridge which divides the vertex from the front; thorax flattened, somewhat granulated and whitish, laterally projecting a little over the origin of the hemelytra, a slightly elevated longitudinal central line, and two abbreviated oblique elevated lines near the head; a velvet black spot each side over the tip of the hemelytra: pleura, hemelytra and pectus black-brown.

Length to the tip of the wings, half an inch.

*Obs.* I am indebted to Mr. Lesueur for this interesting species, which he caught at Kaighn's Point, in the vicinity of Philadelphia. The insects of this genus vary much in their sculpture, size and color, which renders it difficult to distinguish the species, of which we seem to have several. In the above description I have purposely avoided a minute detail of colors and markings,

ing at least the twentieth of an inch beyond the thorax : pleura with a dilated blackish-brown line or vitta, beginning at the eye, and including the abdomen above and on each side : feet brown, more or less annulated with pale : venter pale yellowish or testaceous.

Length to tip of wings, nine-twentieths of an inch.

*Obs.* I obtained this insect in Georgia and East Florida, where it is not uncommon.

The upper and right figures of the plate ; natural size and magnified.

#### LAPHRIA. PLATE VI.

*Generic characters.* Body elongated ; wings incumbent : antennæ divaricating, approximate at base, three-jointed ; third joint inarticulate, obtuse, and destitute of a style : front impressed : hypostoma with long rigid hairs ; proboscis horizontal, short, without dilated labia : poisers naked : abdomen with seven segments : posterior tibia arquated : tarsi terminated by two nails and two pulvilli.

*Obs.* The genus *Laphria*, of Meigen, is perfectly well distinguished from its neighboring groups by the above stated traits, and has received the approbation of all recent authors who are willing to keep pace with modern discoveries. The arrangement of the nervures of the wings, particularly of those of the anterior margin, is very similar to that of the wing nervures in the genus *Asilus*, as restricted by the same author ; but the form of the antennæ, in this case, at once decides the genus, those of *Laphria* being simple at their termination, whilst those of *Asilus* are furnished with a very distinct, and generally elongated, setaceous style.

These insects fly swiftly, and the force with which the wings strike upon the air, produces a loud humming sound. They are predaceous, and pursue with voracity smaller and weaker insects, which they seize, and then alight to suck out their fluids. Many species inhabit the United States. Of these, the *thoracicus* of Fabricius, and another which I described under the name of *tergissa*, in consequence of the form of body and sounding flight, have been very frequently mistaken for humble-bees, (*Bombus*.)

The larvæ live, probably, in the earth.

LAPHRIA FULVICAUDA.—*Specific character.* Black, with cinereous hair; wings blackish; tergum fulvous at tip.

*Laphria fulvicauda* nobis, Journ. Acad. Nat. Sciences, vol. iii. p. 53.

*Desc.* Body black, with long cinereous hair: head large, transverse; eyes deep black: thorax varied with black and cinereous, and with short, black hair; two distinct, longitudinal, dorsal, black lines, with a more obvious cinereous band in the middle, which is interrupted by the dorsal lines; two cinereous obsolete points each side behind: wings blackish: halteres pale at tip: abdomen depressed, above and beneath subglabrous, hairy each side; the two terminal segments of the tergum with a common fulvous spot.

Length about three-fifths of an inch.

*Obs.* I obtained it at the settlement of Cote sans Dessein, on the Missouri river, during a short stay of Major Long's exploring expedition at that place.

Lower right figure.

[This species has been called *L. pyrrhacra* by Wiedemann.—SACKEN.]

LAPHRIA SERICEA.—*Specific character.* Above with golden-yellow hair; thorax, beneath the hair, dark blue.

*Laphria sericea* nobis, Journ. Acad. Nat. Sciences, vol. iii. p. 74.

*Desc.* Head black; hypostoma and gena with grayish hair, that of the former tinged with dull yellowish; vertex and occiput with black hair: thorax dark blue, with golden-yellow hair,

*L. ephippium* Fabr. Meig. It is an inhabitant of the United States generally.

Lower left figure. [This reference is evidently wrong, the upper figure is meant.—LEC.]

LAPHRIA DORSATA.—*Specific character.* Blue-black; head and feet with cinereous hair; nervures of the wings widely margined with fuscous.

*Desc.* Head black; anterior orbits with a white line: mystax cinereous; vibrissæ black; stethidium blue-black, with slight dark cinereous hair; wings, nervures widely margined with fuscous, obscuring the anterior part of the wing, and leaving the middle of the cellules on the inner margin almost hyaline: feet black, tinged with purplish, and with cinereous hair: poisers blackish, paler at base: tergum blue-black, with a coppery or purple gloss.

*Obs.* It was taken near Philadelphia. The back of the abdomen, although of a dark color, in a certain light reflects a brilliant coppery or purplish tint. The short nervure which terminates at the apex of the wing, is not only bifid at its origin, as in the *albarbis* Meig., but the upper branch joins the nervure above, as well as the lower branch joins the nervure below.

Upper figure. [The lower left figure.—LEC.]

#### NEMOGNATHA. PLATE VII.

*Generic character.* Antennæ longer than the thorax, with the first and third joints nearly equal, the second a little shorter, terminal one fusiform, abruptly terminated by a short point; palpi filiform; maxillæ very much elongated, filiform, curved; elytra elongate, linear; tarsi with entire joints.

*Obs.* This genus was formed by Illiger for the reception of such species of the Linnæan genus *Meloe*, as are distinguished by the remarkable and striking character of the elongated maxillæ. Fabricius included them in his genus *Zonitis*. The maxillæ of these insects have the closest analogy with the spiral trunk of the *Lepidoptera*, and every point of comparison induces the supposition that this organ is applied to the same uses. The species are found on flowers.

NEMOGNATHA IMMACULATA.—*Specific character.* Lemon-yellow, immaculate; elytra pale yellowish, with scattered punc-

tures; maxillæ not longer than the thorax, and with the antennæ and palpi black.

*Desc.* Antennæ black, basal joint pale testaceous; eyes, maxillæ, palpi and tips of tarsi, black; elytra irregularly punctured, naked, polished.

*Obs.* It inhabits the plains of Missouri, and was captured by Mr. Thomas Nuttall, on a species of thistle (*Carduus*;) I have since observed it in some plenty in the same locality. It seems to be allied to the *Zonitis pallida* of Fabricius, judging by his description of that insect.

The smaller figure of the plate denotes the natural size, and the figures beneath it exhibit magnified representations of some of the oral organs, &c.

Fig. 1. Antenna.

2. Mandible.

3. Tongue and labium supporting the labial palpi.

4. Labial palpus.

5. Maxilla with its palpus, verticillate with short hairs.

#### XYLOTA. PLATE VIII.

*Generic character.* Antennæ three-jointed, inserted on a frontal elevation, nutant; third joint suborbicular, compressed, with a naked seta placed behind the dorsal middle; ocelli three; proboscis with fleshy lips; hypostoma above impressed, near the mouth a little elevated, retuse and subtuberculated; posterior thighs dilated, spinous beneath; onychii two; abdomen with five



*Desc.* Head golden-yellow, black at base of the antennæ and in a line proceeding to the mouth; hypostoma very slightly indented, carinated; antennæ ochraceous; eyes chestnut; thorax dark brassy; with two cinereous lines confluent before, attenuated behind, and abbreviated behind the middle; an obsolete interrupted line each side over the wings; scutel on the posterior margin ochraceous; pleura and pectus with a pale glaucous covering; feet ochraceous, thighs black at base; posterior pair black-brassy, their thighs dilated, with spines beneath, placed irregularly; a prominent projecting angle near the tip; tergum black; basal segment on the lateral margin ochraceous; second segment with a large subquadrate ochraceous spot each side, approaching the middle, where it is longer than on the margin, posterior edge ochraceous; third segment with also a large subquadrate ochraceous spot each side approaching the middle where it is longer than on the margin, it reaches the basal suture, posterior edge ochraceous; fourth segment ochraceous at tip; venter yellowish-white, blackish at tip.

*Obs.* This specimen is a female, and was captured in Pennsylvania. By its form of body, and the character of the hypostoma, it approaches the genus *Eumerus* Meig.

The upper right figure of the plate.

[This species belongs to the genus *Tropidia* Meig.—SACKEN.]

*XYLOTA EJUNCIDA.*—*Specific character.* Blackish; tergum with four semioval, subequal, ochraceous spots; posterior thighs rather slender, with two series of black spines beneath.

*Desc.* Head silvery; antennæ ochraceous; eyes chestnut; thorax greenish-brassy, with a greyish spot on each side before; poisers and scale whitish; feet whitish, two last joints of the tarsi black; thighs piceous, with a slight brassy tinge, posterior pair not remarkably dilated, exterior series of spines nearly equal from near the base to the tip; posterior tibia piceous at tip; tergum black, with a slight tinge of green; basal segment polished, immaculate; second and third segments each with a large semioval ochraceous spot on each side, approaching the middle and attaining to the lateral edges, but not reaching either the base or tip of the segment; fourth segment obscure, brassy, polished; venter yellowish-white, black at tip.

*Obs.* The specimen is a male. I caught it on the banks of the St. John's river, in East Florida, during a short visit to that

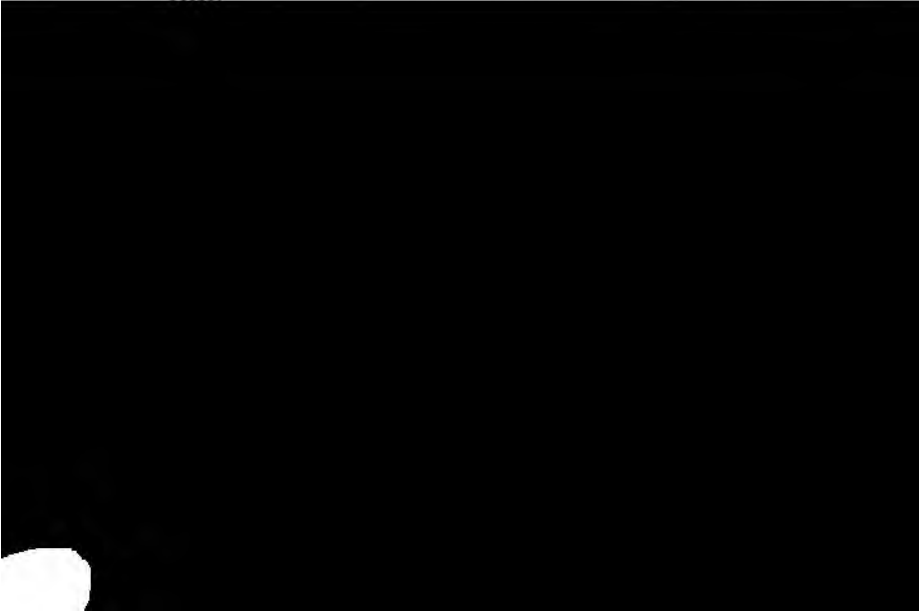
country, in company with Messrs. Maclure, Ord, and T. Peale. A specimen, in the collection of Mr. William W. Wood, was taken near Philadelphia.

The upper left figure.

*XYLOTA PROXIMA*.—*Specific character*. Blackish; tergum about six-spotted; posterior thighs dilated, with a large rufous spot on the middle.

*Desc.* Head yellowish-silvery; vertex black; antennæ ochraceous; thorax blackish, two grey oblong-triangular spots on the anterior margin, connected with a lateral line that extends nearly to the origin of the wings; poiser and scale whitish; pleura and pectus silver-grey; feet ochraceous; posterior thighs much dilated, with a very distinct rufous spot each side, and another at base, posterior half of the inferior edge more prominent, spines extending from near the base to the tip; posterior tibia blackish, rufous in the middle and at base; tergum black; first segment with an ochraceous lateral margin and basal edge; second segment with a large semioval ochraceous spot each side; third segment with a small transversely semioblong-oval ochraceous spot each side at base; fourth segment with a transverse pale ochraceous line each side at base, and posterior margin; venter yellowish-white, blackish at tip.

*Obs.* Very common in the neighborhood of Philadelphia, on flowers. I obtained a variety in Virginia, of which the spots of the tergum are grayish-glaucous. The two sexes are similar in color.



light, silvery; vertex polished; thorax brassy-black; humerus, in a certain light, silvery; scutellum, color of the thorax; wings fuliginous; pleura and pectus nearly black, polished; feet, anterior pairs tinged with brownish; posterior thighs much dilated, immaculate, spines short; tergum bright rufous, basal segment with a longitudinal black line at base; venter paler rufous.

*Obs.* A native of the Southern States. I obtained two specimens in East Florida, one of which is represented on the annexed plate. It was first described by Fabricius, in his *Systema Antliatorum*, from the collection of M. Bosc, but no figure has been hitherto given of it.

The lower right figure.

#### CALANDRA. PLATE IX.

*Generic character.* Body elliptic-oval, above somewhat depressed; eyes immersed, oblong, encircling the head beneath; antennæ geniculated, inserted at the base of the rostrum; rostrum dilated at the insertion of the antennæ; elytra plain, not covering the anus above; anus acutely prominent; tarsi reflected to the inner side of the tibia.

*Obs.* Such of the individuals, as were known to Linné, of almost the whole of the vast tribe of insects now distinguished from the other tribes by the name of *Curculionides*, were included by that author in his single genus *Curculio*. So extremely numerous were the species, thus combined together, as to offer a very serious inconvenience to Entomologists. They soon perceived that the continual accessions of species, resulting either from the more critical and accurate observations of numerous investigators, or from the contributions of those who were occupied in the adventurous task of exploring remote and unknown regions, had so far augmented the obstacles already existing, that the hand of reformation became absolutely necessary. Accordingly Olivier, Herbst, Fabricius, Latreille, Germar, Megerle, and other distinguished systematists, undertook to separate the Linnæan genus *Curculio* into numerous smaller assemblages, and thus to bring this part of the system into a more intimate alliance with the order observed by nature in the distribution of species.

The labors of these naturalists eventuated in the construction of more than one hundred additional genera, but the characters

of many of these genera appear to be too obscure, and of others not sufficiently important to justify their collective adoption. By far the greater portion of them, however, will probably tend to the elucidation of this difficult part of the system, and amongst these may be ranked the genus *Calandra* of Clairville, distinguished by obvious and striking traits.

The history of many species of this group is highly interesting and important, and we propose to represent, in a future volume, those that are so destructive to the wheat, rice, and maize.

[The species here described belong to the genus *Sphenophorus* Sch.—LEC.]

*CALANDRA TREDECIM-PUNCTATA*.—*Specific character*. Above sanguineous; five spots on the thorax, four on each elytrum, and scutel, black; head and all beneath black.

*Rynchophorus tredecim-punctatus* Herbst. vol. vi. p. 10, pl. 60, fig. 5.

*Calandra cribraria* Fabr. Syst. Eleut. part 2, p. 434.

*Curculio tredecim-punctatus* Melsheimer's Catalogue, p. 28. No. 597.

*Desc.* Body punctured, beneath black, with a cinereous shade in a particular light, and with numerous large punctures; head black; rostrum, dilated portion not longer than broad, but more dilated at tip, and with an impressed longitudinal line; thorax sanguineous, with five black spots, of which two are orbicular, and placed on each side, and one is central, fusiform, sometimes rounded; scutel black; elytra sanguineous, with punctured striæ,

inhabitant of the United States; I have found it in Missouri, Arkansa, and the North West Territory, as well as in Pennsylvania.

Lower right figure: the line represents the natural size, with a lateral enlarged view of the head.

*CALANDRA TREDECIM-PUNCTATA*, Var. *Desc.* Body punctured; beneath black, with a cinereous shade in a particular light, and with numerous large punctures; head black; rostrum, dilated portion longer than broad, but more dilated at tip, and with a deeply impressed puncture at its base above: thorax sanguineous, with five black spots, of which two are placed on each side, the posterior one larger and generally oblique, and one is central fusiform: scutel black: elytra sanguineous, with punctured striæ; interstitial lines flat, with dilated punctures; two small marginal spots; a large common transverse spot on the middle, and a common tip consisting of about one-third of the length of the elytra, black.

The spots of the elytra appear at first view to be formed and located differently in this from those of the preceding, yet by dilating the two central elytral spots of the preceding insect transversely, and enlarging the posterior spots in a posterior and transverse direction, we shall be able to exhibit an arrangement precisely comforable to that of the present variety.

The spots of the elytra in this variety are subject to some variations; the transverse spot on the middle of the elytra is divided into two on one of my specimens; the posterior common spot is subcordate, being much narrowed behind in another, and in a third is a black spot on each elytrum, insulated from the common terminal spot which is much narrowed.

This insect is a native of Missouri and Arkansa, as well as of the Atlantic States.

The lower left figure; the natural size is represented by a line, above which is an enlarged view of the head.

*CALANDRA QUINQUE-PUNCTATA*.—*Specific character.* Black; thorax sanguineous, with five black spots; elytra with a sanguineous exterior submargin.

*Desc.* Body punctured, beneath black, with a very slight cinereous reflection in a particular light: rostrum, dilated portion longer than broad, but wider at tip, and with a deeply im-

pressed puncture at base above: thorax sanguineous, with five black spots, of which two are on each side, the posterior one larger, oblique, and generally confluent along the basal margin with the opposite basal spot, the central spot is dilated and elongated, fusiform: scutel black: elytra black, with punctured striæ; interstitial lines flat, punctured, penultimate lateral one and ultimate one at base sanguineous: thighs with a dull sanguineous spot on the middle, obsolete on the posterior pair.

Size of the preceding.

I observed this species to be very abundant on the Southern Sea Islands of Georgia; many specimens also occurred in East Florida, but I cannot learn that it has ever been taken further north than that State, neither does it seem to inhabit the western region.

The upper right figure; the natural size is exhibited by a line, above which is an enlarged representation of the head.

*CALANDRA COMPRESSIROSTRA*.—*Specific character*. Castaneous black; rostrum compressed; a profound frontal puncture; thorax with two punctured lines converging to the scutel.

*Calandra compressirostra* nobis, Journ. Acad. Nat. Sciences, vol. iii. p. 319.

*Desc.* Body dark chestnut-brown, passing into blackish: head with small distant punctures, larger ones on the base of the rostrum, which decrease in size to the tip; a profoundly impressed large puncture between the eyes: rostrum very much compressed, acutely carinate above: antennæ at the tip rufous: thorax with

## ANTHICUS. PLATE X.

*Generic character.* Antennæ with conic joints, the second and third nearly equal, terminal one ovate-oblong; labial palpi terminated by a small truncate joint; thorax subcordate, often strangulated near the middle; penultimate tarsal joints bilobate; nails simple.

*Obs.* The type of the insects which now constitute the genus *Anthicus* of Fabricius, was included by Linné in that of *Meloe*, by Geoffroy, Olivier and Illiger in that of *Notoxus*, and by Marsham in that of *Lytta*. I formerly adopted Geoffroy's designation, but that name has since been adopted by European naturalists for a very different species of insects.

[These species belong to *notoxus*, as now restricted.—LEC.]

ANTHICUS BICOLOR.—*Specific character.* Blackish, thorax with a projecting horn, and with the feet testaceous, immaculate.

*Desc.* Head very dark testaceous; front and vertex covered by short incumbent hair of a silky lustre; eyes black; thorax testaceous, immaculate; horn obtusely dentate each side, and somewhat bicarinate above; scutel small, black; elytra purplish-black; breast and abdomen testaceous, sericeous; body with short incumbent hair; feet naked.

*Obs.* In the forests of New Jersey, I have found this little insect in the month of June, on the leaves of the hickory (*Juglans tomentosa* Michaux), and of some other plants. The Rev. John F. Melsheimer, an able Entomologist, informed me that he obtained many specimens from the garden carrot. This species is allied to the *Notoxus serricornis* of Panzer, fascicle 32, pl. 17.

The upper figures of the plate, of which the smaller one indicates the natural size.

ANTHICUS MONODON Fabr.—*Specific character.* Testaceous; elytra with a black band and spots.

*Anthicus monodon* Fabr. Syst. Eleut. i, p. 289.

*Desc.* Body above hairy; head with the vertex silky; eyes fuscous; thorax with a lateral obscure spot; horn obtusely dentate each side; scutel small; elytra with a black band on the middle; each marked by two black spots at the base, of which one is near the scutel, and the other on the humerus; a black obsolete one near the tip; abdomen silky.

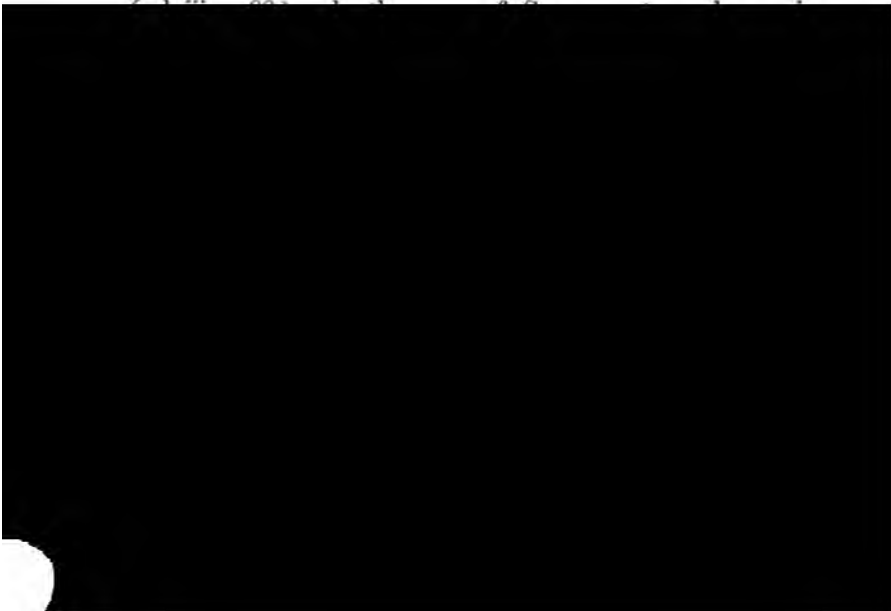
*Obs.* Not uncommon. I have found it in June, on the oak and other forest trees; it very much resembles *Anthicus monoceros*, of which Marsham observes, "Thorax recta antrorsum exiens in cornu nigricans ultra caput extensum, unde verè monstrosa et insectis insolita facies." *A. monodon* was first described by Fabricius, but it has not been hitherto figured.

Lower figures, of which the smaller indicates the natural size.

#### SYRPHUS. PLATE XI.

*Generic character.* Antennæ separate at base, shorter than the head, advanced, nutant, triarticulate; third joint orbicular or oval, compressed, with a seta near the dorsal base; hypostoma tuberculated, but not very remarkably prominent; feet simple and slender; wings incumbent parallel, central transverse nervure placed almost perpendicularly.

*Obs.* This genus was included by Linnè in his comprehensive genus *Musca*. In the *Systema Antliatorum*, Fabricius constructed a separate genus under the name of *Scæva*, for the reception of many insects that he had formerly placed in his genus *Syrphus*. But it is now ascertained that nearly or quite all the species retained in the latter belong to other genera, and particularly to those of *Volucella* and *Sericomyia*. The name *Syrphus* being therefore disengaged, has been very properly restored to its old species, and, as far as I can learn, the name of *Scæva* is rejected by Meigen. Consequently, the nine new species which I described in the *Journal of the Academy of Natural Sciences*





ried with yellow; abdomen, excepting the base of the tergum, yellow-ferruginous.

*Desc.—Male.* Head yellowish-white, somewhat silvery, polished; antennæ more deeply tinged with yellow; tubercle of the hypostoma a little dusky at tip; eyes chestnut; thorax dark greenish-olivaceous, spot before the wings and scutel, yellow; pleura black with yellow spots; pectus black; feet, including the coxæ, pale yellow; tergum yellowish-ferruginous; first segment and base of the second black; tip of the second segment either dull ferruginous or blackish; third segment dull yellow, somewhat ferruginous at base and tip; venter yellow at base, ferruginous towards the tip.

*Obs.* I have seen but two specimens, which are both males, taken near Philadelphia. In form of body it resembles the *S. scalaris*, Fabr., and *teniatus*, Meig., of Europe.

The upper figure of the plate.

[Belongs to the genus *Sphærophoria* Macq.—SACKEN.]

*SYRPHUS OBSCURUS.*—*Specific character.* Blackish-green; tergum with lateral full cupreous triangles.

*Desc.—Male.* Head metallic black, tinged with green; antennæ, third joint dull testaceous; stethidium entirely blackish-green, polished, immaculate; feet dull testaceous, thighs blackish at base; tergum velvet-black, slightly tinged with green; second segment with a dull coppery semioval spot on the middle of the lateral margin, extending on the edge to the base and tip; third and fourth segments each with a large dull coppery triangular spot on each side at base, approaching closely towards each other on the basal margin, and extending on the lateral edge nearly to the tip; an obsolete, longitudinal, central, dull coppery line, widely out spread on the posterior margin, so as to attain to the posterior angles; venter purplish or dusky, highly polished.

*Obs.* Of this also I have seen but two specimens, both of which are males; one was taken near Philadelphia, and the other at Chinquoteage, Virginia.

The lower figure of the plate.

*SYRPHUS OBLIQUUS.*—*Specific character.* Thorax green-bronze, with a yellow dot before the wings; tergum bounded and spotted with yellow.

*Scæva obliqua nobis.* Journ. Acad. Nat. Sci., vol. iii. p. 89.

*Desc.* Head yellow, a dusky line above the antennæ; orbits yellow to the vertex; antennæ blackish on the superior edge; thorax dark green-bronze; a yellow spot before the wings; scutell bright yellow; feet whitish; anterior tibia and tarsi a little dilated, the latter with short joints; posterior thighs with one obsolete band, their tibia two banded; extremity of all the tarsi dusky; tergum black; first segment with a yellow basal edge; second segment with a band at base, interrupted into two oblong triangles, and a broader one on its middle, yellow; third segment with one arquated band; fourth and fifth segments each with an oblique oblong-oval spot each side, and two longitudinal lines on the middle, yellow.

Variety  $\beta$ . Band of the third segment of the tergum interrupted into four small spots.

*Obs.* A very pretty insect, not uncommon in gardens on flowers, leaves, &c. The sexes are alike in color and markings.

The left figure of the plate. (This figure represents the variety.)

*SYRPHUS POLITUS.*—*Specific character.* Thorax with a yellow line each side, and a cinereous dorsal one; tergum with yellow bands and quadrate spots.

*Scæva polita nobis*, Journ. Acad. Nat. Sciences, vol. iii. p. 88.

*Desc.* Head yellow, above the antennæ dusky silvery; thorax somewhat olivaceous, a yellow line above the wings, and a dorsal cinereous one; scutell dusky yellowish, with a paler margin; feet whitish; tergum black; basal segment with the basal and lateral

## SMERINTHUS. PLATE XII.

*Generic character.* Tongue very short; antennæ serrate; palpi contiguous, short, terminal joint tuberculiform, very short; anterior wings angulated; anus simple.

*Obs.* Latreille constructed this genus to receive such Linnæan Sphinges as have a very short or indistinct tongue. The species, although closely allied to those of the genus from which they were separated, are yet distinguishable by their form of body and habits of life. They are short, robust, and generally remarkable by a handsome display of colors. They are never seen to shoot, like meteors through the air, from flower to flower, balancing the body at each, in order to extract sweets from the nectary, but, unlike the Sphinx and humming-bird, their flight is heavy and reluctant, and they receive food only in the state of repose.

The larvæ are generally elongated, with lateral, oblique, colored lines, and a prominent horn on the upper part of the posterior extremity of the body. They feed on leaves, and undergo their change to the pupa state in the earth, without the care of constructing any regular cocoon.

SMERINTHUS GEMINATUS.—*Specific character.* Inner angle of the posterior wings with a large black spot, in which are two blue spots.

*Desc.* Head tinged with ferruginous before; vertex white; antennæ whitish, pectens brown; thorax whitish, with a dark brown disk rounded before and gradually dilating behind; superior wings varied with brown and cinereous; a dark semi-oval spot at the tip is obvious and remarkable; inferior wings yellowish, with a red disk, and a large deep black spot of a similar shape to that of the thorax, including two blue spots.

*Obs.* Closely allied to the *ocellata* of Europe, and to the *myops* and *excaecata* of our own country; but it may be distinguished from either by the double blue spot in the black patch on the posterior wings. The *excaecata* I have not seen, and have therefore to rely on Abbot's drawing of that insect, as given by Smith in his splendid work, the "Lepidopterous Insects of Georgia," where it is represented with a single large blue spot, in the place of the two that exist on each posterior wing of the present spe-

cies. These two spots seem to be constant as well as common to both sexes.

The plate represents two views of the natural size.


#### LEPTIS. PLATE XIII.

*Generic character.* Antennæ short, approximate, at base, triarticulate; basal joint cylindric; second cyathiform; third conic, not annulated, and terminated by a long seta; stemmata three, situated on the vertex; proboscis and palpi exerted, the latter pilose, with its second articulation elongated; wings divaricated; halteres naked; onychii three; abdomen consisting of seven segments.

*Obs.* The species were arranged by Linné in his genus *Musca*. Fabricius, Meigen and Latreille, in their earlier works, removed them from *Musca*, to form a distinct group, to which they applied the name of *Rhagio*, including, as it then stood, some species that have been since separated, and now stand under the name of *Atherix*. Those authors, in their subsequent publications, finding that the appellation of *Rhagio* presented the inconvenience of a collision with that of a Coleopterous genus (*Rhagium*), united in rejecting the word, and supplied its place with that of *Leptis*, which I have adopted.

Some of the species are common; they are predaceous; the larvæ are cylindrical, apodal, with a small horny head, and live in the earth.

LEPTIS ORNATA.—*Specific character.* Velvet-black; thorax and abdominal bands with whitish hair; wings hyaline; feet



with which it has probably been hitherto confounded; but it differs from that beautiful species by its pellucid wings, pale tibia, broader bands of the tergum, color of the thoracic hair, and by having silvery hair on the hypostoma and front. It belongs to the second division of the genus, in which the palpi are cylindrical, or slightly clavate and recurved.

The upper left figure of the plate.

[Belongs to the genus *Chrysopila* Macq.—SACKEN.]

**LEPTIS ALBICORNIS.**—*Specific character.* Pale testaceous; tergum with a dorsal series of black spots; wings spotted and tipped with fuscous.

*Leptis albicornis nobis*, Journ. Acad. Nat. Sciences, vol. iii. p. 38.

*Desc.* Body above rufo-yellowish; hypostoma chestnut; antennæ yellowish-white; seta black; palpi and rostrum white; cheeks somewhat glaucous, with whitish hair; thorax three or five lined with black, the three intermediate lines being obsoletely separate; scutellum immaculate; wings hyaline, costal margin tinged with yellowish; nervures, particularly those of the inner margin, those that are transverse, stigmata and tip of the wing margined with fuscous, more obvious and dilated at tip of the wing, and on each side of those transverse nervures that are beyond the middle; tergum with a large rounded black spot on each segment, and a black line on the lateral edge.

*Obs.* Very closely allied to *L. scolopacea* Fabricius, of Europe, but it differs from that insect in several particulars, as in the color of the antennæ, stethidium, feet, &c. The specimen is a male.

The upper right figure.

**LEPTIS VERTEBRATA.**—*Specific character.* Pale testaceous; tergum with a dorsal series of black spots; wings immaculate.

*Leptis vertebrata nobis*, Journ. Acad. Nat. Sciences, vol. iii. p. 38.

*Desc.* Head black: terminal joint of the antennæ, excepting the seta and palpi, pale; stethidium blackish (in the female pale testaceous, with obscure lineations;) thorax with two obsolete cinereous lines, and a pale humeral spot: scutellum and poisers pale-yellowish: wings hyaline, costal margin tinged with testaceous, nervures brown; feet pale testaceous, coxæ, tarsi, half of the posterior thighs, and posterior tibia, black, (coxæ of the female color of the stethidium;) tergum yellowish, segments each with

a fuscous or blackish spot above, and a line on the lateral edge; the dorsal spots of the posterior segments are extended into bands: venter blackish on the terminal joints.

*Obs.* This species, as well as the *albicornis*, belongs to Meigen's first division of the genus, in which the palpi are elongate-conic, and incumbent on the proboscis. It resembles the *albicornis*, but the wings are immaculate, &c.

The lower left figure.

LEPTIS FASCIATA.—*Specific character.* Velvet-black; thorax with golden-yellow hair; tergum fasciate with white; wings hyaline with a large brown stigma.

*Leptis fasciata nobis*, Journ. Acad. Nat. Sci., vol. iii. p. 37.

*Desc.* The fundamental color of the thorax is the same with that of the other parts of the body; hypostoma in a particular light cinereous; pleura and pectus dark lurid; poisers fuscous, scapus whitish; wing nervures brown, stigma rather large, brown and distinct; tergum on the posterior margin of each segment banded with yellowish; venter immaculate; feet whitish, thighs reddish-brown towards their bases, tarsi dusky at tip.

*Obs.* Inhabits Pennsylvania. The nervures of the wings are arranged as in Meigen's second division, and the insect has much the appearance in miniature of *L. thoracica* of Fabricius.

The lower right figure.

[Belongs to the genus *Chrysopila* Macq.—SACKEN.]

#### BERYTUS. PLATE XIV.



*Desc.* Antennæ longer than the body, terminal joint fuscous, yellowish at base and tip: eyes black: stemmata sanguineous, distant, placed very far back, almost lateral: clypeus produced, conic; rostrum as long as thorax, inflected, and placed in a groove beneath: thorax gibbous behind, punctures large and crowded: scutel with an elevated spine: elytra nervous, with a black costal spot near the tip: posterior feet longest; a spine each side as thick as the thighs, originating before the posterior coxæ, curving upward above the elytra, and abruptly attenuated near the tip: abdomen depressed, fusiform, margined; margin paler.

*Obs.* Of this genus Fabricius has described two species, of which the *tipularius* appears to be very like this insect—at least as far as I can judge from description, having no opportunity to consult a figure of either insect of the genus. One specimen in my cabinet has the antennæ rather shorter, and on the thorax are three lines a little elevated, one of which is dorsal and two marginal, with a two-lobed raised transverse spot before: this may be a sexual variety, or possibly a distinct species; but, for want of sufficient knowledge of them, I will not, at present, incur the responsibility of separating them.

The smaller figure in the plate denotes the natural size.

#### PELECINUS. PLATE XV.

*Generic character.* Antennæ with not more than fourteen joints; tongue trifid; neck not apparent; posterior tibæ clavate; abdomen slender, elongated, filiform, inserted at the posterior and inferior extremity of the metathorax.

*PELECINUS POLYCEATOR* Drury.—*Specific character.* Black; antennæ with a white annulus; posterior tibia sericeous on the inside.

*Ichneumon polyturator* Drury, vol. ii. pl. 40, fig. 4.

*Pelecinius polycerator* Fabr., Latr.

*Desc.* Head with a compressed, elevated scale-like tooth at the inner base of each antenna: antennæ, tenth joint and half of the ninth joint white: wings, nervures and costal margin fuscous: feet, two anterior pairs blackish-piceous; posterior pair black, polished, the tibia much dilated at tip and much dilated on the inner side, the tarsi piceous.

*Obs.* A truly singular insect, not uncommon in various parts of the United States. Its flight is slow and awkward, and when taken it endeavors to force the point of the abdomen through the skin of the hand, but its strength not adequate to the task. The whole abdomen resembles a much elongated pedicel, from which the abdomen itself, or dilated portion, has been accidentally removed.

The plate exhibits two views of the insect, natural size, and a wing somewhat magnified, to show the arrangement of the nervures.

#### BLAPS. PLATE XVI.

*Generic character.* Mentum small, or moderately large, quadrate or orbicular; palpi terminated by a larger joint; terminal joint of the maxillary palpi securiform; mandibles naked to their base; clypeus terminated by a straight line; labrum transverse; antennæ moniliform at tip, third joint much larger than the fourth; back flat; thorax almost quadrate; elytra acute at tip.

[These species belong to the genus *Eleodes*.—LEC.]

*BLAPS SUTURALIS*.—*Specific character.* Blackish; elytra scabrous, grooved, reddish-brown, punctured; lateral thoracic margin reflected.

*Blaps suturalis nobis*, Journ. Acad. Nat. Sci., vol. iii. p. 257.

*Desc.* Body black-brown, punctured: antennæ, third joint longer than the fourth and fifth conjointly; fourth, fifth, sixth and seventh equal obconico-cylindric; eighth obconic-orbicular, shorter than the preceding; remaining joints nearly equal to the



or five obsolete impressed striæ: feet scabrous, anterior thighs slightly dilated beneath before the tip into an obtuse angle.

Length one inch nearly.

*Obs.* During the progress of Major Long's expedition up the Missouri, that enterprising and excellent officer entrusted me with the direction of a small party of thirteen persons, destined to explore the country on the south side of that extended river. After encountering many obstacles and privations which it is unnecessary to enumerate, the party arrived at the village of the Konza Indians, hungry, fatigued, and out of health. Commiserating our situation, these sons of nature, although suffering under the injustice of white people, received us with their characteristic hospitality, and ameliorated our condition by the luxuries of repelion and repose. Whilst sitting in the large earth-covered dwelling of the principal chief, in presence of several hundred of his people, assembled to view the arms, equipments, and appearance of the party, I enjoyed the additional gratification to see an individual of this fine species of *Blaps* running towards us from the feet of the crowd. The act of empaling this unlucky fugitive at once conferred upon me the respectful and mystic title of "medicine man," from the superstitious faith of that simple people.

On the subsequent journey towards the Rocky Mountains, several specimens occurred, together with other insects of the same classical division, till then unknown.

The upper right figure.

*BLAPS ACUTA.*—*Specific character.* Blackish; elytra scabrous, grooved; dilated sutural margin reddish-brown; exterior edge acute; thoracic margin not reflected.

*Blaps acuta nobis*, Journ. Acad. Nat. Sci. vol. iii. p. 258.

*Desc.* Body blackish, punctured: head with larger punctures than those of the thorax: antennæ as in the preceding species: labrum prominent, emarginate, with short yellow hairs at tip: thorax subquadrate: anterior edge concave; punctures minute, separate; lateral margin not reflected; lateral edge regularly arcuated, a little excurved at base; posterior edge nearly rectilinear: scutel impunctured: elytra grooved: the four sutural grooves with a single series of elevated points; interstitial lines with about one series of distant punctures; sutural margin

obsoletely reddish-brown; exterior edge acute: epipleura obsoletely grooved, scabrous, punctured, and from the base to near the middle tinged with reddish-brown: anterior thighs dilated, and armed with a prominent spine near the tip.

Length nearly one inch and one-fifth.

The gradually recurved form of the lateral margin of the thorax in the preceding species, gives to the whole thorax a somewhat concave appearance, notwithstanding the convexity of the disk. In this conformation the present insect is obviously distinct, although very similar as respects general color, the form of the elytra, feet, and abdomen. The thorax here exhibits a regular convexity, which gradually subsides towards the lateral edges. This species occurred in Missouri, near Council Bluff.

The upper left figure.

*BLAPS OBSCURA*.—*Specific character*. Blackish: elytra scabrous, grooved, dark reddish-brown, margin rounded, thoracic margin not reflected.

*Blaps obscura nobis*, Journ. Acad. Nat. Sci. vol. iii. p. 250.

*Desc.* This species resembles the preceding, but the thorax is proportionally longer, the elytra are of a dull reddish-brown color, approaching to piceous, and the lateral margin is rounded so as to exhibit no edge.

Length more than one inch.

*Obs.* I obtained this insect in the country bordering the river Platte, within a hundred miles of the Rocky Mountains.

The lower left figure.

The lower right figure; the figure near the bottom of the plate is a magnified representation of an antenna.

## ARGYNNIS. PLATE XVII.

## PAPILIO Linn.

*Generic character.* Antennæ terminated by a short club; palpi divaricating, second joint compressed, broad, hairy; third joint terminating abruptly by a short, slender, acute joint: inferior wings suborbicular; anterior feet short, feeble: tarsi with double nails.

*Obs.* Many species of this genus are beautifully decorated with spots on the lower surface of the inferior wings, resplendent with all the brilliancy of polished silver, or rivalling the milder, but not less attractive lustre, of precious opal. The superior surface of the wings is varied with red or orange, agreeably relieved by spots or lines of black or brown. The larva or caterpillar is armed with spines, and the pupa or chrysalis attaches itself by the tail to a fixed object, in order to pass its destined period of quiescent preparation, for its change to the perfect, adult or butterfly state.

Linné included the species in his genus *Papilio*, but Fabricius separated them as a distinct group under the name we have here adopted.

ARGYNNIS DIANA Cramer.—*Specific character.* Wings above black-brown, with a very broad fulvous exterior margin, in which are a few blackish spots and nervures.

*Papilio Diana* Cramer, *Ina.* vol. ii. p. 4. pl. 98, fig. D. E.

*Le P. Diane* Encycl. Method. *Insectes*, pl. 35, f. 2.

*Desc.* Body above black-brown: vertex, and anterior sides of the thorax, ferruginous: wings on the basal two-thirds blackish-brown: the outer third pale fulvous, on the superior wings divided by blackish-brown margined nervures, and marked by two distant series of dots of a similar color, the exterior of which is obsolete; on the margin of the inferior wings the two series of dots are hardly to be traced: beneath, on the superior wings, the blackish-brown basal portion has from six to eight ochraceous spots, of which the external ones are longitudinal, and those nearer the base are nearly transverse: intervening between these two sets of spots, are two opalescent spots, placed transversely, and sometimes confluent; exterior third of the wing ochraceous,

deeper towards the anterior angle, and with two distinct fuscous spots; inferior wings, on the basal two-thirds reddish-brown, with two small distant silvery spots on the anterior margin, and a series of obsolete dull silvery lines behind the middle; exterior third of these wings ochraceous, with a marginal series of seven short silvery lines.

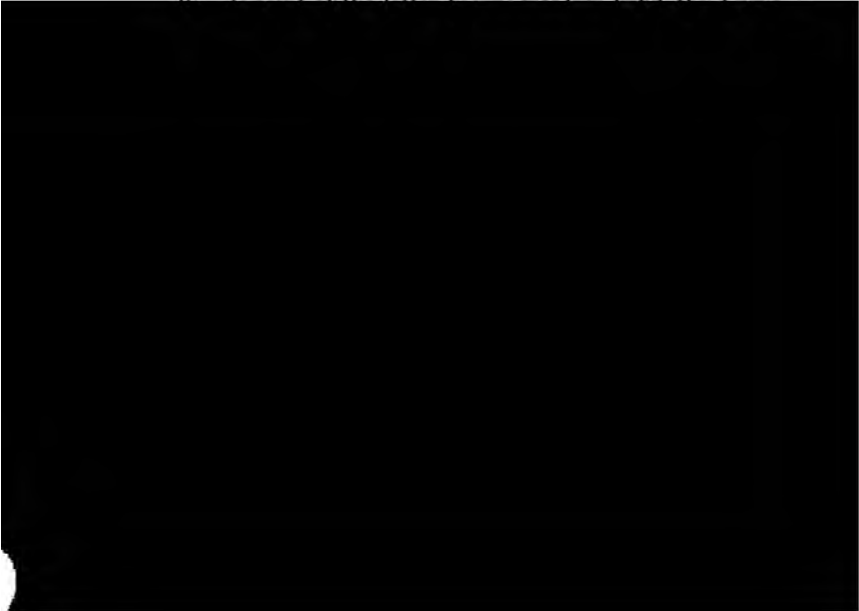
*Obs.* The present species, though not remarkable for any superior gaiety of coloring, interests by the simple contrast of blackish and pale orange colors, of its superior surface, as well as by the rows of slender silvery lines which decorate the under page of its inferior wings.

I have taken this insect in Georgia, East Florida, Arkansas, and Missouri, but have not yet met with it in Pennsylvania. Cramer described his specimen, in the collection of Mr. J. C. Sylvius Van Lennep, and states it to have been taken in Virginia. He has applied to it the terrestrial name of the daughter of Jupiter and Latona, and the twin sister of Apollo, in pursuance of the example of Linné, who thus endeavored to connect Entomology with Mythology and the civil history of antiquity.

The plate represents two views of this species, beneath which is an enlarged palpus.

#### CICINDELA. PLATE XVIII.

*Generic character.* Antennæ filiform; clypeus shorter than the labrum; maxillæ monodactyle, with two very distinct palpi, of which the exterior one is nearly equal to the labial palpi,



white: elytra with a white spot on the shoulder, another equidistant from the first and the band: band broad, arising from the middle of the margin, refracted at the centre of the elytrum, and terminated near the suture in a line with the tip of the third spot; this spot is large, orbicular, and placed near the external tip of the terminal one, which is transverse and triangular: body beneath green: trochanters and tail purple.

*Obs.* The specimen from which this description and the annexed representation were taken, is a female, the only one I have seen: it was caught by Mr. Nuttall, on the sandy alluvions of the Missouri, above the confluence of the river Platte.

Upper figure of the plate.

[This species is unknown to me; it resembles the green varieties of *C. purpurea*, but differs by the middle fascia of the elytra being more suddenly bent, and more prolonged behind.—LZC.]

*CICINDELA FORMOSA*.—*Specific character.* Red cupreous, brilliant; elytra with a three branched, broad white margin.

*Desc.* Front hairy: labrum large, three-toothed: elytra with a broad white border, anterior and posterior branches short, intermediate one flexuous, nearly reaching the suture; edge of the elytra green; body beneath green or purple-blue, very hairy: thighs blue, tibia green.

Length seven-tenths, breadth one-fourth of an inch.

*Obs.* A beautiful species; it was captured by Mr. Thomas Nuttall, on the sandy alluvions of the Missouri river, above the confluence of the Platte.

Lower figure of the plate.

### ÆGERIA.

*Generic character.* Antennæ fusciform [fusiform?]; palpi long, separate, covered with long scales or porrected hair; wings horizontal in repose; abdomen bearded at tip.

*Obs.* Fabricius formed this genus for the reception of such species of the genus *Sesia*, as have the palpi prominent, distinct, and covered by elongated scales. As *Sesia* now stands, it differs from the present, by the short palpi, which are covered by short, close-set scales; and their terminal joint is very short, tuberculiform; Lamarck, however, applies the name *Sesia* to the present genus.

The wings in the various species of *Ægeria* are chiefly trans-

parent, and the body being slender, with colored bands in some of the species, they have much the appearance of bees and wasps; whence the names *apiformis*, *vespiformis*, *crabroniformis*, &c., which have been applied in this genus. Degeer, in his history of one of the species, observes, "the first time that I saw it, I hesitated to take it with my naked hand, believing I had found a wasp."

*ÆGERIA EXITIOSA*.—*Desc. Male*. Body steel-blue; antennæ ciliated on the inner side, black, with a tinge of blue; palpi beneath, yellow; head with a band at base, both above and beneath, pale yellow; eyes black-brown; thorax with two pale yellow longitudinal lines, and a transverse one behind, interrupted above, and a spot of the same color, beneath the origin of the wings; wings hyaline, nervures and margin steel-blue, which is more dilated on the costal margin, and on the anastomosing band of the superior wings; feet steel blue, the coxæ, two bands on the tibiæ including the spines, incisures of the posterior tarsi, and anterior tarsi behind, pale yellow; abdomen with two very narrow pale yellow bands, one of which is near the base, and the other on the middle; tail fringed, the fringe margined with white each side.

*Female*. Body very dark steel-blue, with a tinge of purple; antennæ destitute of ciliæ; palpi beneath, black; thorax immaculate; superior wings steel-blue, without any hyaline spot; inferior wings hyaline, with an opaque margin and longitudinal line; the latter and the costal margin are dilated; tergum with the fifth segment bright reddish-fulvous.

of the species are very unlike each other. In the present instance, the difference is so great, as to render it difficult to construct a good common specific character.

We are indebted to Mr. James Worth, a zealous and careful observer, for the principal part of the accurate information which we possess relative to this formidable insect. The following observations are extracted from a valuable essay, by that gentleman, published in the volume quoted above.

The egg deposited on the side of a glass tumbler, was oblong-oval, dull yellow, and so small as to be only just discernible by the naked eye. Excepting in a state of confinement, he never saw the female at rest, but in one instance, when she was perched on a leaf, which may possibly be the usual place of deposit, though he is inclined to believe that it is made on some part of the trunk of the tree. The larva is of a white color, the head being reddish-brown. It is somewhat difficult to ascertain the early movements of the larva, in consequence of its small size; but its destructive career certainly commences about the last of September, or early in October, by its entering the tree probably through the tender bark under the surface of the soil; after having passed through the bark, it proceeds downwards into the root, and finally turns its course towards the surface, where it arrives about the commencement of the succeeding July.

Having attained to its full growth, the larva enters the pupa state, between the first and middle of July; enveloped in its follicle, it may then be readily discovered close to the trunk, surrounded by the gum which oozes from the wound. The pupa state continues from the tenth of July to the latter part of that month, or beginning of August.

Mr. Worth examined his fruit trees on the tenth of July, when he obtained twenty follicles, and about thirty larvæ; of the follicles, four were empty, the insect having assumed the wing state. The larvæ had all arrived near the surface of the ground, for the purpose of undergoing their great change.

Against the depredations of this insect, many supposed remedies have been prescribed, such as the application of hot water, tanner's bark, and flower of sulphur, to the root of the tree, and soft soap and lime-wash to the trunk; but it is obvious, that no application of this kind can injure the insect, without coming in

contact with it whilst it remains in the egg, or infantile state, on the outside of the tree, for after having penetrated to the interior, no superficial application can effect it. The various substances placed around the root of the tree, such as ashes and sand, the uncovering of its base during winter, and covering again for the summer, are also pronounced by Mr. Worth, from his experience, to be inefficient and even injurious to the health of the tree.

“The best plan of guarding against the ravages of the insect, which I have found, is to examine the trees early in the month of July; take a bricklayer’s trowel, and opening the ground around the trunk, the lodgment of the insect will at once be discovered, by the appearance of gum, and it can readily be destroyed; one person can thus examine more than a hundred trees in less than half a day, and very few, if any, of the insects will escape. But in order the more effectually to destroy them, I would advise, that from the first to the middle of August, some swingling tow, a piece of hairy hide, (the hair inside, but turned over at top,) or some other coarse thing of six or more inches in width, be tied close around the trunk of the tree, the under edge to be a little covered with earth, so as to prevent any passage beneath; about the middle of September remove the bandage, and immediately give the whole trunk of the tree a covering of soft soap or lime-wash, well brushed on, that no spot from the head to the root may remain untouched. Perhaps a decoction of tobacco, or some other wash, might do better; even hot water would be effectual, where the tree was sufficiently hardy to bear the ap-



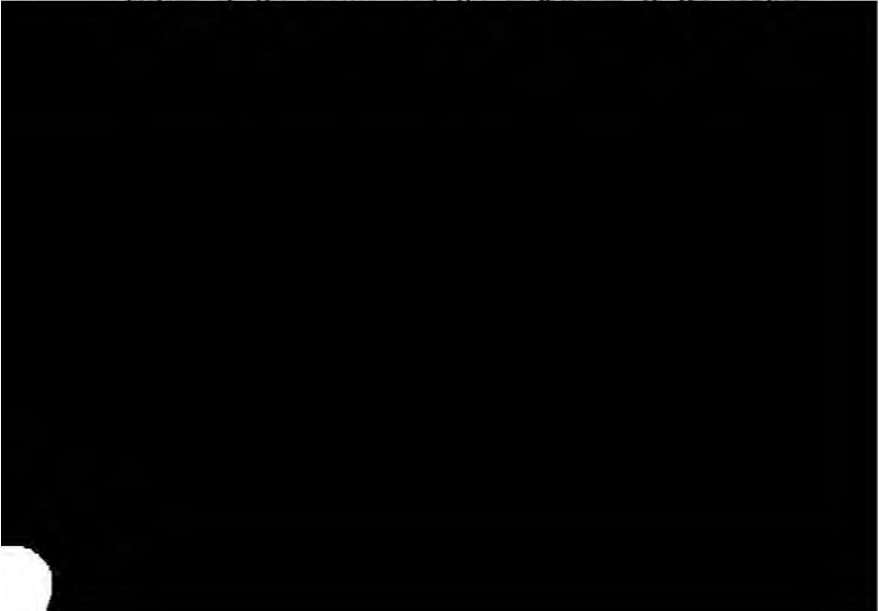
had it well broken up, and kept clean during the summer; the trees soon assumed a healthy appearance, and furnished a plentiful supply of fine fruit, and the whole orchard is now in the most flourishing condition, and I believe there will be no difficulty in keeping it in that state."

But my friend Mr. J. Gilliams, has certainly derived great advantage from the use of the cinders of the common anthracite, which is now so generally introduced as a fuel; he opens a small basin around the trunk of the tree, and fills it with the cinders; he informs me that the trees thus treated, have assumed a more healthy appearance than others, and they are not at all infested by this destructive insect.

In Mr. Skinner's very useful paper, the *American Farmer*, (vol. vi. p. 14,) are a few highly important remarks on this subject, by Mr. William Shotwell, of which the following is an extract: "I cleaned a number of trees, and put a coat of lime mortar, about half an inch thick round the body, then drew the earth up to it. These trees are now perfectly healthy, and there has not been the sign of a worm about them since, although it was five years past that the experiment was made. I have since tried the same on a great number of trees with equal success."

In the same work (vol. vi. p. 37,) are some interesting observations on the preservation of peach-trees, by Mr. Evan Thomas, Jr., from which we gather the following information. On removing the earth from about the roots of some trees of a sickly appearance, he observed a considerable quantity of gum that had exuded from several minute apertures of the trunk; on opening these carefully with a knife, the larvæ were discovered. They were about one inch long, of a cream color, the head somewhat depressed, chestnut-brown. "They had perforated the bark about one inch below the surface of the earth, and were devouring voraciously, both the alburnum and liber, leaving the cortex and epidermis as a covering and defence." Having destroyed these depredators, Mr. Thomas applied Forsythe's healing composition to the wounds, with the expectation that it would not only exhibit its usual efficacy, but that it would also prevent the access of a new colony of the enemy. In this, however, he was disappointed, for on examining the same trees again, at the expiration of about six weeks, he

found that a new deposit had been made, and that the young worms were then devouring what their predecessors had left. This fact exhibited the inefficacy of the practice of laying bare the roots during the winter. "About the close of July, many of these insects, having assumed the winged state, soon after deposit their eggs in peach-trees, just beneath the surface; first wounding the bark in different places, which, on examination, appears to have been effected by a blunt pointed instrument. They leave from one to fifty, and in some instances, nearly three hundred eggs in each tree, according to its size and capacity to support the future progeny: these soon appear, but it is difficult to detect them until they have acquired a growth of two or three weeks, when they are four or five lines in length. From this period, their growth is accelerated or retarded in proportion to the quantity of nourishment afforded. In general, however, the pupæ are formed early in October, in the midst of a conglomeration of gum, fibrous and excrementitious matter, and about the close of the month the insect issues from the chrysalis, deposits its eggs as before mentioned, and prepares to hibernate, like others of the same tribe, in the roofs of houses, beneath the bark of old trees, &c. The larvæ appear in April, assume the nymph state, and accomplish their final transformation in the course of July. Thus, there are two periods in each year assigned for their production and reproduction: nevertheless, individuals may be seen during the whole season, in almost every stage of existence." Having thus ascertained an important part of the natural



the part intended to be secured, by two or three ties of twine or woollen yarn, so that one-half shall be below, and the other half above the surface; draw earth, divested of grass or rubbish, to the tree, pressing it with the foot, close to the matting. The insects, governed by instinct, will not lay their eggs in the matting, but will seek elsewhere for a situation congenial with their habits. If, however, there is a clammy moisture, or portions of gum adhering to the main stem or roots, these should be regarded as almost certain indications of worms; every opening, however minute, should be carefully probed, and the direction taken by each worm, ascertained; cut away that portion of the bark only, of which the interior part has been destroyed, until you arrive at the object of pursuit, which must be removed and killed. Having in this manner extirpated all that are to be found, trim the edges of the wounds neatly, and fill up the cavities with a composition consisting of two parts of fresh cow-dung, one part of leached ashes, to each gallon of which, add a handful of ground plaster-of-paris, and as much water as will reduce the the whole mass to the consistence of a thick paste; spread a thin coat of this composition over the part to be covered, and then apply the bandage as before directed. As the ants, and several other insects among the wounded trees, exceedingly and materially retard their recovery, I would recommend the part to be washed with common white-wash, and a little flower of sulphur, or snuff sprinkled over it, before the composition is applied. The latter end of April, and the beginning of September, are the most suitable periods, for those accustomed to it, to begin the search."

Several other gentlemen have particularly observed the peach insect, and of these we may mention Dr. James Smith, who has given the result of his inquiries, in the sixth volume of the American Farmer, p. 334, and Mr. Reuben Haines, who has published his observations in p. 401, of the same volume. But we think it highly probable, that the practice first proposed by Mr. Shotwell, if carefully and properly carried into effect, will effectually secure the peach tree from the depredations of the *Egeria crüiosa*.

Upper figure—Female.

Middle figure—Male.

Right figure—Exuvia of the Pupa.

Left figure—Follicle.

*ÆGERIA OMPHALE*.—*Specific character*. Body red; abdomen behind and dorsal line black, with blue spots.

*Cosmosoma Omphale* Hubner, fig. 1. 4. ♂ ♀.

*Desc.* Body bright red: head black, with large brilliant blue spots: antennæ at tip, whitish; palpi, second and third joints red; thorax with a black transverse line before, continued over the wings; on the anterior part are four blue spots: tergum bright red, with a longitudinal line, abbreviated at base, and tip black; in which color are four brilliant lateral blue spots, and about seven dorsal ones: venter excepting at base, and each side near the base, black, with a large pure white spot on each side, before the middle; tuft at tip obsolete: wings hyaline, nervures and margins black; the black of the tip wide: feet bright red: intermediate tibiæ black before: posterior tibiæ with a black line before.

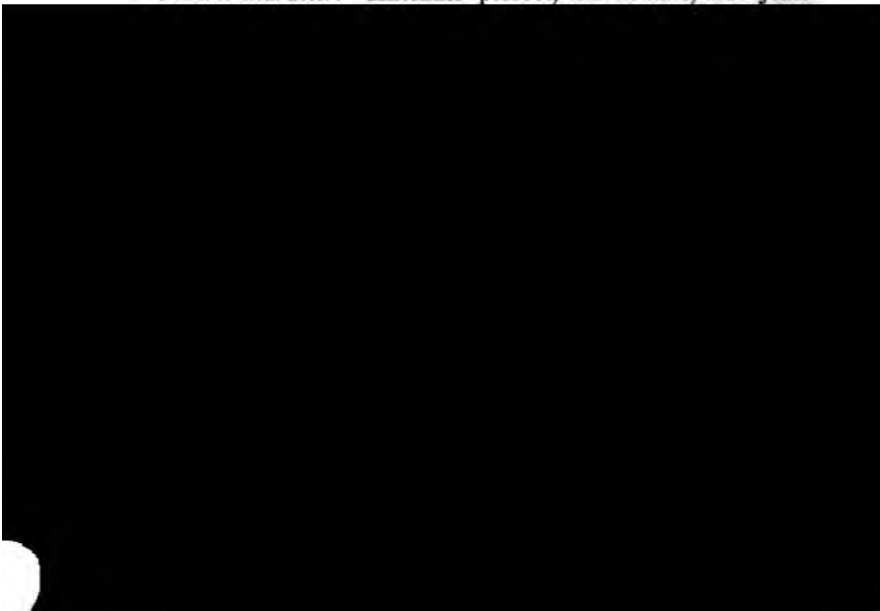
*Obs.* This very beautiful species was found by Mr. T. Peale in Florida, and was presented to me, for the present plate, by the Prince of Musignano, with whom I agree in the specific name here adopted from Hubner.

The striking contrast of the red and black colors, and the beautiful brilliant vivid azure blue, reflected from the spots of the abdomen, anterior parts of the thorax and the head, render this a highly interesting insect.

Lower figure.

#### COENOMYIA. PLATE XX.

*Generic character.* Antennæ porrect, triarticulate, first joint



dark cinereous; vertex with an elevated, obtuse, dusky line between the stemmata: thorax ferruginous; anterior angles a little prominent, rounded and concave behind, with an elevated line reaching to the origin of the wings: scutel color of the thorax: wings pale yellowish-brown, with margined nervures: poisers whitish: feet somewhat paler than the thorax: tergum polished; posterior segments somewhat sericeous; second, third, and fourth segments, with three abbreviated series of punctures near their bases.

*Obs.* During the recent journey of Major Long's party to the source of St. Peter's river, I obtained three individuals of this interesting species, the only one yet found in North America. They occurred in a small forest of scattered trees, where we halted at our dining hour, in the immediate vicinity of Wennabea's Sauk village on the Pecktannos.

None were observed at any subsequent period of the journey.

#### LYCUS. PLATE XXI.

*Generic character.* Head retracted; antennæ approximate, much compressed, more or less serrated; mouth small, produced into a short rostrum; maxillary palpi much longer than the labials, terminal joint triangular, truncated; mandibles at tip, entire and acute: elytra thin and flexible, nearly of equal breadth, or much enlarged towards the tip; thorax receiving and covering the head, rounded before; penultimate joint of the tarsi bilobed.

*Obs.* These insects are somewhat similar in their appearance to the well known "Fire-fly," whose scintillations, on a summer's evening, are scarcely less abundant than the lights of the firmament, which they feebly, and but for a moment, rival. But *Lycus* is not endowed with the property of yielding light, and it is further distinguished from *Lampyris* by the somewhat elongated mouth, eyes of moderate size, and by the form of the terminal joint of the palpi, which is dilated, compressed, and truncated at tip. Another kindred genus, *Omalisus*, of Geoffroy, is in like manner destitute of the curious power of giving light, but the mouth is not rostrated, the second and third joints of the antennæ are very short, and the head is only in part covered by the thorax.

Fabricius separated these insects from *Lampyris*, under the name of *Lycus*, (*Λύκος*), a word, which, according to Olivier, was employed by Herzychius to designate a species of spider; by Athenæus for a fish; and by Aristotle for a kind of bird. But the word was commonly used by the Greeks, and by Homer himself to indicate the wolf.

In respect to form, the body is, in many instances, somewhat linear, that is, having the sides approaching to parallelism; but in the *L. latissimus* Fabr. of Africa, and the *L. palliatus* Fabr. of the Cape of Good Hope, the elytra are so much dilated as to give the species an orbicular appearance; whilst in other species, as the *L. fasciatus* Fabr. of Cayenne, these substitutes for anterior wings are greatly dilated, only toward their posterior extremities. Many have this dilatation, which is more particularly observable in the males. Their colors are chiefly fulvous, violet-black, and sanguineous.

The larva is supposed to live in the earth; the perfect insect is innoxious, and is found on flowers.

*LYCUS RETICULATUS*.—*Specific character*. Black; lateral thoracic margins fulvous; elytra fulvous, with a band, and extremity, blackish.

*Lycus reticulatus* Fabr. Syst. Eleut. pt. 2. p. 111. Oliv. Ins. vol. ii. No. 29, p. 7. pl. 1, fig. 7.

*Desc.* Body deep black; polished: antennæ exceeding the middle of the elytra, opaque: rostrum short: thorax black, the dilated lateral margins a little recurved, fulvous; an acute carina in the

it from Mr. Holmes of Maine, and have myself found specimens in Missouri, North-West Territory, and East Florida. In Pennsylvania it is very common.

The elytra of the male, are more dilated behind than those of the female.

The upper left figure of the plate.

[Belongs to *Calopteron* Guér., (*Digrapha* Newman, *Characteres* Dej.)—LEC.]

**LYCUS TERMINALIS.**—*Specific character.* Black; thorax with fulvous lateral margins; elytra fulvous, with a black tip.

*Lycus terminalis* nobis, Jour. Acad. Nat. Sci., vol. iii. p. 178.

*Desc.* Body deep black, polished; antennæ reaching the middle of the elytra, opaque: rostrum short: thorax black, the dilated lateral margins a little recurved, fulvous: an acute carina in the middle; posterior angles attenuated, prominent, acute; scutellum black; elytra fulvous, with four elevated lines, which are alternately a little larger: the suture and exterior edge are also a little elevated: interstitial spaces with numerous transverse elevated lines; terminal third of the surface violaceous-black: wings blackish at tip; feet sericeous.

Numerous specimens were observed by Major Long's party in Missouri and Arkansas. They occurred in the prairies on plants, and I found them to be especially abundant near the village of the Konza Indians.

It is, without doubt, closely allied to the preceding, but the anterior band of the elytra is always deficient, the tibiae are somewhat more dilated, and there seems to be a greater difference of size between the sexes, the male being proportionally smaller. We cannot suppose it to be the *L. dimidiatus* Fabr., although the general tenor of the description corresponds very well, inasmuch as he represents the antennæ to be flabellate, with elongated serratures, and the base of the elytra to be rufous, whereas, the antennæ of this species are similar to those of the *reticulatus*. The black on the thorax of the female is reduced to a narrow line.

The upper right figure of the plate.

[Belongs to *Calopteron*.—LEC.]

**LYCUS SANGUINIPENNIS.**—*Specific character.* Thorax black: lateral margin sanguineous: elytra sanguineous, immaculate.

*Lycus sanguinipennis* nobis, Journ. Acad. Nat. Sci., vol. iii. p. 178.

*Desc.* Body deep black, polished: rostrum prominent; thorax broad, not narrowed before: the transverse diameter exceeding the longitudinal: livid-black; lateral margins a little recurved, pale sanguineous; a carinate line on the anterior margin, terminating in a groove which extends to the base: posterior angles a little prominent: scutel black: elytra pale sanguineous, with elevated lines, and intervening transverse ones: wings a little dusky, with brown nervures.

One individual only, occurred to Major Long's exploring party, near the base of the Rocky Mountains. It is widely distinct from the preceding species.

The lower right figure.

[I have a species of *Calopteron* from Mexico which agrees with the characters here given.—LEC.]

LYCUS PERFACETUS.—*Specific character.* Black: thorax each side rufous; elytra striate.

*Desc.* Body deep black: head polished, with a deeply impressed longitudinal line: antennæ opaque, compressed, a little serrated: second joint more than half the length of the third, which is as long as the fourth, though less dilated: thorax somewhat unequal, polished black, with broad rufous lateral margins: an impressed longitudinal line; posterior angles acute: elytra with slightly impressed striæ, and rounded interstitial lines: beneath polished black.



slightly compressed, not obliquely truncated; oviduct concealed, or hardly prominent.

*Obs.* As originally instituted by Linné, the genus of this name was extremely abundant in species, and although many divisions have been made by Fabricius and others, the species are still numerous. As I adopt the genus, it corresponds with that of Fabricius and Latreille, and with *Cryptus* as defined by Lamarck,

These insects perform an important part in the operations of nature, inasmuch, as they seem destined to limit the increase of Lepidopterous insects, by destroying their larvæ, so injurious to the interests of agriculture. All are parasitic, and in habit they may be compared to the *Ichneumon* amongst the quadrupeds, an animal said to break the eggs of the crocodile, and even to penetrate the abdomen of that formidable reptile, in order to devour the living viscera.

The female, in this interesting genus, when about to deposit her eggs, becomes very active and impatient, flying from leaf to leaf, in search of a proper nidus; having found a caterpillar of suitable magnitude, she places her eggs either upon the skin, or by puncturing it, within the body, notwithstanding the convulsive efforts of prevention made by the victim. I was witness to a somewhat curious fact in relation to one of these insects; observing an object closely resembling a caterpillar, resting on a leaf, I was preparing to take possession of it, when an *Ichneumon* alighted on the leaf, and proceeded to examine the object of my attention; it ran briskly up to it, and touched it first on one side, and then on the other, with its vibratory antennæ; but it finally departed without any attempt at oviposition. This deportment excited my suspicions in regard to the nature of the supposed caterpillar, and on examining it more closely, I discovered, to my surprise, that it was not the larva of an insect, nor even the remains of one. Thus it appeared, that the *Ichneumon*, as well as myself, was deceived by its organ of vision, and that another sense was resorted to, in order to ascertain the truth.

The larvæ disclosed from the eggs of the parent *Ichneumon* are altogether destitute of feet; like intestinal worms, they feed on the interior of the body of their Promethean victim, which continues to walk and feed as usual. The depredators are by no means indiscriminate in their choice of food, but prefer the

adipose part of the system, and spare the vitals until the former is exhausted. By this selection, the life of the larva is continued until the parasite obtains its full size, and is prepared to enter into the state of pupa. The larva then attaches itself firmly to a fixed surface by means of its feet, and dies. The pupæ, secure within, await their destined period in tranquillity, and the included insects finally emerge from their contracted boundaries, by gnawing a passage through their own indurated covering, as well as through the common integument of the larva.

**ICHNEUMON DEVINCTOR.**—*Specific character.* Black; abdomen rufous; scutel, annulus of the antennæ and of the tibiæ, white.

*Desc.* Body black: antennæ rather short, annulus pure white, commencing at the ninth joint, and extending to the eighteenth: scutel pure white: wings dusky violaceous: abdomen, with the exception of the first segment, bright rufous: tibiæ, excepting at base and at tip, pure white: anterior and intermediate tarsi, with the first joint, white at base.

*Obs.* This species is not very common. I obtained a specimen in the North-West Territory. An individual occurred in Missouri, that may, perhaps, be only a variety of the present species; it is smaller, and has ferruginous, instead of white, on the feet.

The upper right figure.

**ICHNEUMON UNIFASCIATORIUS.**—*Specific character.* Black; annulus of the antennæ, two scutellar spots, and band near the base of the abdomen, white.

*Desc.* Body black; front, narrow red line on the frontal and

by the white spot behind the tip of the scutel, and by the two between the anterior wings.

The lower right figure.

**ICHNEUMON CENTRATOR.**—*Specific character.* Black; antennæ annulate; scutel, and disk of the thorax, ferruginous.

*Desc.* Body black: head dull ferruginous, with a polished, impressed, black line at the base of the antennæ: antennæ with a white annulation, beginning at the seventh joint, and extending to the seventeenth: thorax with the disk between the anterior pair of wings and the scutel, dull ferruginous: tibiæ dull rufous, excepting at tip: wings dusky violaceous.

*Obs.* It occurs frequently in Pennsylvania, and as I have found it both in Missouri and the North-Western Territory, it appears to be a pretty general inhabitant of the United States.

The lower left figure.

**ICHNEUMON BREVICINCTOR.**—*Specific character.* Black; scutel and the very short band on the antennæ, white.

*Desc.* Body black: head immaculate: antennæ with the white annulus beginning at the seventeenth joint, and extending to the twenty-first: thorax immaculate: scutel yellowish-white: wings a little dusky: knees and tibiæ of the anterior pair of feet, dull rufous.

*Obs.* In form and general appearance, it resembles *unifasciatus* nob., but the different individuals correspond in having the annulus of the antennæ very short, and commencing at the seventeenth joint; in having no spot beyond the tip of the scutel, in having the head immaculate, &c. It also resembles *nigratorius* Fab., but is much smaller, and is altogether destitute of orbital lines.

The upper left figure.

### LIMENTIS. PLATE XXIII.

**PAPILIO** Lin.—**NYMPHALIS** Latr.

*Generic character.* Antennæ gradually clubbed; club slender, hardly compressed, elongate-obconic; palpi not elongated, second joint not much compressed, the anterior margin not remarkably broader; anterior pair of feet spurious; wings not very much longer than broad; four hinder feet with double nails; abdomen

received in a groove, formed by the dilatation of the inner margin of the inferior wings.

*Obs.* This is one of the numerous modern genera of Papilionides, that are eminently remarkable by the feeble, abbreviated, and incomplete anterior feet of the species of which they are composed. These feet are usually so short, as to be altogether useless for the purpose of locomotion; they are habitually applied against the breast, and are altogether destitute of nails. The larvæ are elongated, and feed on leaves, and the chrysalids are suspended by the tail, with the head towards the earth. For the genus *Limenitis*, we are indebted to Fabricius; but this learned author has not left us sufficiently obvious characters, by which to distinguish it from his closely allied genus *Apatura*. We are, in fact, inclined to consider them both as sub-genera, as well as many other of the Fabrician genera of Lepidoptera.

LIMENITIS ARTEMIS.—*Specific character.* Brown-black; wings indented, with a common white band, and common marginal row of double blue lunules; a series of six ferruginous dots on the posterior wings; venter and lateral line, white.

*Nymph. Phal. Artemis* Drury, vol. ii. pl. 10, fig. 3 and 4.

*Desc.* Body black: occiput with two white points; a short white line behind each eye: palpi white on the exterior side: wings with a broad common white band a little beyond the middle, intersected by the black nervures which are not margined; a common marginal series of double blue lunules: edge alternating with white and black; superior wings with three or four

pair of feet, white before : abdomen with a white line each side, and a broader one on the venter.

*Obs.* This beautiful insect, occurred sparingly in the North-Western Territory, during the advance of Major Long's expedition towards lake Winnepec. I also found it at that lake, as well as at the Lake of the Woods, and in other parts of Upper Canada. On the expedition to the Rocky Mountains, I obtained several specimens in Arkansaw, and Mr. Nuttall has recently sent me one from Cambridge.

Drury first described this insect ; his figure is that of a small specimen.

The plate represents two views of the insect, of the natural size.

#### DICÆLUS. PLATE XXIV.

*Generic character.* Mandibles destitute of an articulated nail at tip ; palpi six, terminal joint, obconic, truncated ; anterior tibiæ emarginate ; two anterior tarsi dilated in the male, and furnished beneath, with dense, granuliform papillæ ; antennæ filiform ; labrum emarginated, and with a longitudinal indented line ; posterior thoracic angles, covering the humeral angles.

*Obs.* As respects number of species, this is a limited group of insects. Their aspect is, however, striking and peculiar, the body being large, dilated, and depressed, with profoundly indented striæ on their elytra ; the posterior angles of the thorax extend far backward, covering the base of the elytra, so as to present no interval between thorax and abdomen. Our great master, Linné, would have placed these insects in his comprehensive genus *Carabus*, which in the modern system, is a large family, distinguished by the name of *Carabidæ*, and containing nearly ninety genera, of which the present is one. The genus *Dicælus*, was established by Professor Bonelli, of Turin, in an excellent essay, entitled "Observations Entomologiques," which was published in the Memoirs of the Imperial Academy of Turin.

*DICÆLUS VIOLACEUS.*—*Specific character.* Above and beneath violaceous-black ; antennæ, mouth, and feet, black.

*Dicælus violaceus* Bónelli, *Obs. Entom. in Mém. de l'Acad. Imper. de Turin.* And the author, in the *Trans. Amer. Philos. Soc.* vol. ii. New Series, p. 67.

*Desc.* Head black, obsoletely tinged with purplish : mouth and antennæ, black : thorax with the disk black, faintly tinged with violaceous ; this color is very obvious on the lateral edge, and posterior margins ; lateral a little excurved near the posterior angles : elytra deeply striated ; the disk is less distinctly violaceous than the margin, and in a particular light, their color exhibits a slight greenish tinge ; beneath violaceous, and more particularly so on each side : epipleura bright violaceous.

*Obs.* It seems probable, that this species is not an inhabitant of the northern part of the United States, or if found at all in this region, it is certainly very rare. It is, without doubt, chiefly limited in its range to the southern and south-western States, but it is not known to be abundant any where. In my specimen, the second and third interstitial lines of each elytrum, are connected near the base by a transverse line, but this is very possibly not a permanent character. It is now figured for the first time.

The upper right figure.

*DICÆLUS SPLENDIDUS.*—*Specific character.* Thorax violaceous ; elytra cupreous brilliant.

*Dicælus splendidus nobis*, Trans. Amer. Philos. Soc. vol. ii. New Series, p. 69.

*Desc.* Head black : thorax hardly perceptibly narrowed at base ; the posterior part of the lateral edge is not in the slightest degree excurved, but proceeds rectilinearly to the posterior angle ; lateral and posterior margins depressed, lateral edge reflected ; color blackish-violaceous on the disk and more vivid violaceous

**DICÆLUS DILATATUS.**—*Specific character.* Black, impunctured; striæ obsoletely punctured towards the tip.

*Dicælus dilatatus* nobis, Trans. Amer. Philos. Soc. vol. ii. New Series, p. 68.

*Desc.* Head black: palpi blackish-piceous: antennæ brown towards the tip: thorax entirely black; margins depressed; lateral edge slightly reflected; base very slightly wider than any other part; lateral edge nearly rectilinear, very slightly incurved before, and not at all excurved near the posterior angles: elytra totally black; striæ profound, very slightly punctured towards the tip: feet piceous.

*Obs.* This species is an inhabitant of Pennsylvania, and may be occasionally found under stones and other objects, which rest loosely on the soil. Its color is a uniform black, without any tint of those gay colors for which the two preceding species are remarkable.

The lower left figure.

**DICÆLUS SCULPTILIS.**—*Specific character.* Black; elytra with irregularly serpentine striæ.

*Dicælus sculptilis* nobis, Trans. Amer. Philos. Soc. vol. ii. New Series, p. 68.

*Desc.* Body entirely black, immaculate: thorax very slightly widest at base; the lateral edge not at all excurved near the basal angle, and the commencement of the anterior curvature of this edge is at the middle of its length; elytra with their striæ very irregularly serpentine; the interstitial lines are irregular and unequal on their sides, and exhibit a very few adventitious punctures, with raised centres.

*Obs.* Very distinct from the foregoing species, by the singular irregularity, and sculptured appearance, of the striæ of the elytra. It was discovered in Missouri by Mr. Thomas Nuttall, and has not been found in the Atlantic States.

The lower right figure.

[Occurs in western Pennsylvania.—LEC.]

#### MANTISPA. PLATE XXV.

*Generic character.* Antennæ filiform, but little longer than the head, the joints transverse; eyes prominent; thorax having the anterior segment elongated, cylindric-clavate, supporting the

anterior pair of feet at its anterior extremity; anterior feet advanced, very conspicuous, cheliferous, the basal joint very much elongated; wings reticulated, deflected.

*Obs.* A very small, but singular and natural group of insects, allied to *Mantis*, and also to *Raphidia*. Linné placed a species, which he described under the name now adopted as generic, in the genus *Raphidia*, and Lamarck assents to an alliance with that genus, by placing *Mantispa* immediately next to *Raphidia*, in his system. Latreille, who formed the genus, and most other authors, refer it to the same family with *Mantis* and *Spectrum*; indeed, in the Règne Animal, it is considered a mere sub-genus of *Mantis*.

But if we adhere rigidly to the characters of the order Hemiptera,\* in which the superior wings are stated to be coriaceous or of a different consistence from the inferior pair, the genus *Mantispa*,\* notwithstanding its acknowledged affinity with *Mantis*, will be altogether excluded from that order. In construction, number, and consistence of the wings, from which the characters of these grand divisions are derived, it is beyond a doubt a *Neuropterous* genus, and we adopt Lamarck's arrangement in this respect. It is distinguished from all the other genera of this order, by the particular form of the anterior feet.

These insects are not quiescent in the nymph state, or that condition which corresponds to the chrysalis state of the butterfly, but they remain active, as in the larva.

MANTISPA BRUNNEA.—*Specific character.* Light brown;



feet, intermediate and posterior pairs, with yellow tibiæ and tarsi, a rufous spot being near the knee; anterior thighs blackish on the inner side, with a yellow exterior inferior margin, and numerous spines on the inferior edge, of which one is very prominent: tergum, at the base of the first and second segments, black, the former margined with yellow: venter black at base, segments broadly margined with yellow.

*Female.* The yellow color, and marginings, excepting on the feet, and on the first segment of the thorax, obsolete; the wings are darker than those of the male, and the hyaline portion of the wings is tinctured with a shade of the general color.

*Obs.* A specimen of the female of this curious insect, was presented to me, some time since, by Mr. William Mason, of this city; it was found near Philadelphia, by Mr. Tyler. I had the good fortune to find a male, when travelling with Major Long's party on St. Peters' river, in the North-West Territory.

The middle figure represents the male, and the lower figure the female. On the right is an enlarged view of the head, with the antennæ, and part of the thorax, and on the left, is an enlarged view of an anterior foot.

**MANTISPA INTERRUPTA.**—*Specific character.* Wings hyaline, with a narrow ferruginous costal margin, widely interrupted near the tip.

*Desc.* Body pale: antennæ rather slender, perfectly filiform, not differently colored at tip, but somewhat paler at base: thorax, anterior segment rather long, annulate, with slightly elevated obtuse lines, which give it a somewhat wrinkled appearance; two small tubercles before the middle, placed transversely; posterior segment greenish-yellow, with a longitudinal brown line, and another on each side above the wing: wings alike, hyaline, the ferruginous costal margin is narrow, interrupted beyond the carpus, so as to leave only a spot at tip of the wing; on the submargin, is an irregular quadrate dark fuscous spot, confluent with the carpus; the ferruginous margin of the superior wing, is paler towards the base: postpectus, and intermediate and posterior feet, pale greenish-yellow, the front of the former dusky: tergum pale reddish-fulvous, incisures, and vertebral line, blackish: venter pale yellow.

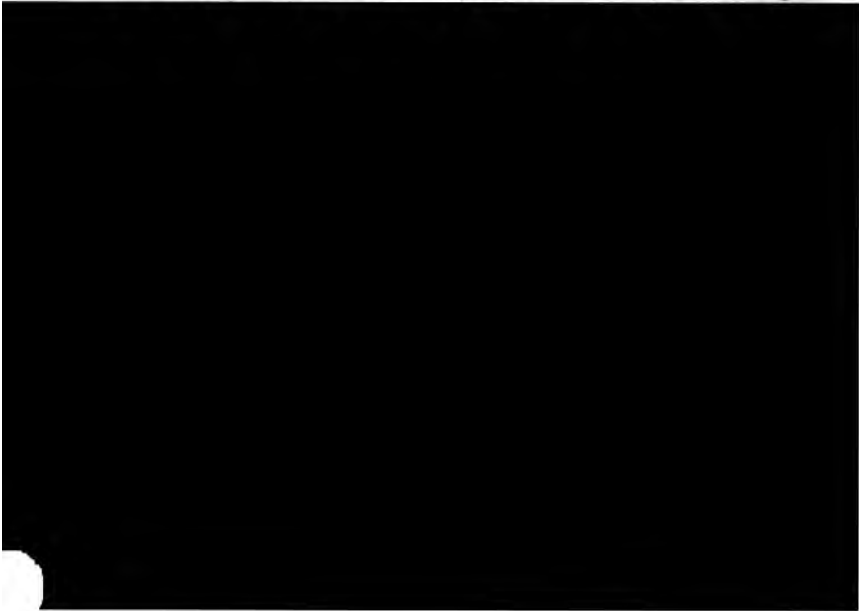
*Obs.* The annexed figure is taken from the only specimen I

have seen. It alighted on the apron of a gig, near this city, and was carefully secured by Mr. James P. Parke, who kindly presented it to me. It remained lively and active for several days in a glass vessel on my table, and I was frequently amused by its dexterity in catching the flies which were introduced for its nourishment. It moved very slowly and cautiously towards its victim, and when at the proper distance, the fore-feet were thrown forwards, and again retracted, with a rapidity of motion that the eye could not follow, bringing the fly with them to the mouth. These feet are used almost exclusively as arms and hands, in various positions for the convenience of mastication; they are rarely used in locomotion, but when the insect advances by means of the other feet, these are folded up, and rest on each side of the long anterior segment of the thorax. The two or three flies first given to this little animal, were entirely devoured, so that not a fragment remained; but having abated its hunger it extracted the fluids chiefly, of those afterwards placed within its reach.

The upper figure; below, is an enlarged representation of a wing, and a posterior foot.

#### BUPRESTIS. PLATE XXVI.

Body firm; head vertically inserted in the thorax to the eyes; antennæ short, filiform, serrated; palpi very short, filiform, or but slightly enlarged towards the tip; mandibles entire at tip; maxillæ bifid at the extremity; thorax with its posterior edge



separated by Latreille, with the name of *Aphanisticus*; these have clavate antennæ.

The family *Buprestiadæ*, consisting of the above mentioned genera, is closely allied to that of *Elateridæ*. But all the species of the latter group, are endowed with the power of leaping, by an abrupt inflection of the anterior portion of the body; their tarsi, also, are simple, without any dilatation of the basal joints.

Many of these insects are gaily ornamented with the most splendid colors, which often shine with a metallic brilliancy. Some have a general coppery tint, whilst others present the beautiful contrast of fine yellow spots and lines, on a polished green or blue surface, and others exhibit the appearance of burnished gold, inlaid on emerald or ebony. In fine, all that is rich and brilliant in colors, may be observed in the decoration of these insects.

They in general, walk slowly, though some run with considerable agility; they rise on the wing with facility, and fly with ease and rapidity. Many elude their enemies by folding their feet and antennæ close to the body, and falling, apparently dead, to the earth. The females have a coriaceous appendage at the posterior part of the abdomen, composed of three pieces; this is probably the oviduct, by means of which, they deposit their eggs in old wood, where the larvæ lives until its change into the perfect state. Their existence in the perfect state is but short, appearing to be devoted almost exclusively to the great object of continuing the race.

Though beautiful and rare, the species are very numerous, and upwards of two hundred are now known; of these, the largest and most splendid, are inhabitants of the American continent.

A species of *Buprestis*, has furnished us with a remarkable instance of insect longevity; the following is extracted from a communication, by Mr. Marsham, to the Linnean Society. (See vol. x. p. 399.)

Mr. J. Montague, on going to his desk in the office of Works at Guildhall, observed an insect which had been seen by his brother in the early part of the day, endeavoring to extricate itself from the wood, which formed part of the desk; he carefully released it from the cell, and it proved to be *Buprestis splendens* of Fabricius, full of strength and vigor. The desk had been fixed

in the office twenty-two years before, and was made of fir wood, imported from the Baltic. That the insect existed in the wood before the desk was made, was proved by the fact of the channel formed by the insect having been then transversely cut.

The word *Buprestis*, is derived from the Greek *βυπρεστις*; but to what insect that ancient people applied the word, is not known with certainty at the present day. The Romans, also, held the same insect to be poisonous, and their civilians recommended the punishment of the law to be inflicted upon those persons who rashly administered, internally, those poisonous insects, the *pihyocampas*, (*Bombyx pihyocampa* Fabr.) and the *Buprestis*. It is evident, however, that they had no reference to any individual of this family, inasmuch as no one of the species is capable of inflicting a serious injury on any of the larger animals. But as the ancient *Buprestis* was stated to be endowed with the power of destroying even the ox, it is conjectured that the Greeks thus designated a vesicating insect, such as a *Mylabris*, a *Lytta*, or, according to some authors, a *Carabus*, the two former of which, when taken into the stomach, produce the most serious effects on the animal economy, and even death itself, under the most afflicting circumstances.

**BUPRESTIS RUFIPES.**—*Specific character.* Elytra, each with four yellow spots, of which the basal one is longitudinal.

*Buprestis rufipes* Oliv. Ins. vol. ii. No. 32, p. 16, pl. 7, fig. 73, a. b. Fabr. Syst. Eleut. pt. 2, p. 188, No. 13. Encyc. Mèth. No. 15. Herbst, Natur. pt. ix. p. 79, pl. 140, fig. 3.

thorax, and is in some specimens continued backwards to the base of the thorax, forming a margin on that part, but not covering the edge; postpectus green, tinged with brassy, and somewhat sericeous; a yellow spot near the middle, and two or three on each side: feet rufo-violaceous: venter rufo-violaceous, more or less varied with green, particularly at the base, and with three series of obscure fulvous spots, two of which are lateral.

*Obs.* One of the largest species of North America, at the same time very beautifully ornamented.

Fabricius quotes Petiver's work, and states its native region to be Maryland; Olivier observes that it is found in Carolina; I obtained a specimen in Missouri, when with Major Long's party in that country, and another has been found in Pennsylvania; but in this state they must be extremely rare.

The lower right figure.

[Belongs to *Ancylochira* Esch.—LEC.]

*BUPRESTIS FASCIATA*.—*Specific character.* Green brilliant; elytra with a yellow band and spot.

*Buprestis fasciata* Herbst, Natur. Syst. vol. ix. p. 162, pl. 145, fig. 22. Fabr. Syst. Eleut. pt. 2, p. 191, No. 31. Oliv. Ins. vol. ii. No. 32, sp. 22, pl. 9, fig. 92.

*Desc.* Body highly polished, green with a brassy tinge, punctured; head confluent punctured; thorax more densely punctured on the anterior portion; on the middle of the posterior margin a distinct indentation; elytra striate, the striae punctured: a yellow undulated band behind the middle, with a dark violaceous areola; midway between the band and the tip, is a yellow spot on each elytrum, with a dark violaceous areola; tip bidentate; beneath immaculate; feet of the same color as the body.

*Obs.* This beautiful insect was sent to me by Mr. E. Holmes of Gardiner Lyceum, Maine. The authors quoted in our synonyms, observe that it inhabits North America, without mentioning any particular part of the continent in which it was found. I had supposed it to be a native of the Southern States, and was therefore surprised to receive it from the northern extremity of the Union. In his description of this species, Olivier remarks, that "on voit quelquefois un point fauve vers le milieu de chaque élytre, entouré de bleu," and this he represents in his plate, but I have only a single specimen, and reference to another in the

collection of the Philadelphia Museum, both corresponding with the annexed figure.

Herbst describes Olivier's variety as a distinct species under the name of *C. maculata*, (vol. ix. p. 163, pl. 148, fig. 5,) without any reference to Olivier.

[Also an *Ancylochira*.—LEC.]

The upper right figure.

**BUPRESTIS CONFLUENTA** [CONFLUENS].—*Specific character.*  
Green, polished, punctured; elytra with confluent yellow spots.

*Buprestis confluenta nobis*, Journ. Acad. Nat. Sci. vol. iii. p. 159.

*Desc.* Body bright green, punctured; head densely and confluent punctured; an obsolete indented longitudinal line, more distinct on the vertex: antennæ purplish, the basal joint rufous: thorax densely and confluent punctured, more particularly on the anterior and lateral margins; in the middle of the disk, these punctures are somewhat sparse: scutellum rounded, convex: elytra striate, slightly tinged with violaceous; the striae and interstitial lines, slightly punctured; very numerous transversely confluent light yellow dots: tip slightly obliquely truncated, acute at the suture, but not mucronate or dentate: edge entire; tarsi purplish-brown.

*Obs.* I cannot find any notice of this very fine insect in any attainable author, and having never obtained an individual in the Atlantic States, I think it highly probable that it is altogether limited in its range to the Western region.

A specimen was presented to me, when at Fort Osage on the

cave; antennæ purple-black, the first and second joints greenish-cupreous; thorax unequal, with large confluent punctures each side, and canaliculate along the middle: posterior angles acute: scutel very small, transverse suborbicular, indented on the middle: elytra with four distant, somewhat elevated lines, and one or two near the suture: in the interstitial spaces are irregular, slightly elevated transverse lines, hardly visible to the unassisted eye: before the middle of each elytrum, is a large, very slightly impressed spot, and another similar one, is rather behind the middle; there is also a very small common indented spot on the suture, opposite to the former spot; exterior edge serrated, from near the middle to the tip; tip simple, somewhat acute; beneath cupreous, polished: a brilliant dilated coppery line extends from the mouth to the pectus; a large groove originates on the anterior part of the pectus, and terminates on the second segment of the venter: tarsi dusky bluish.

*Obs.* This is one of our largest species, and although far less agreeably decorated than the preceding, is yet distinguished by a more uniform garb of polished metallic coloring. I captured the specimen when descending the Arkansas river, with a detachment of Major Long's exploring party.

The upper left figure.

[A *Chalcophora* closely allied to, or more probably, identical with *Buprestis substrigosa* Lap. and Gory.; the latter species occurs from New York to Missouri. Specimens from the original locality would however be desirable for comparison; the figure is badly executed.—LEC.]

#### VANESSA. PLATE XXVII.

*Generic character.* Antennæ terminated by an abrupt short club; palpi contiguous, even at the extremity, the two combined, resembling a rostrum; anterior pair of feet in both sexes, short and very hairy; the two posterior pairs of tarsi, with double nails.

*Obs.* The species which constitute the Fabrician genus *Vanessa*, were referred by Linné to his comprehensive genus *Papilio*.

The larvæ or caterpillars in this genus, live on plants of little altitude, and are often gregarious; they are armed with numerous, long, rigid, dentated spines, which, like the quills of the

Hedgehog, constitute their only defensive weapons. The chrysalids are attached to a fixed object by the tail, and in this reversed posture quietly wait for the period of final emancipation and perfection.

The larva or caterpillar state of insects, has been aptly stated by the great Linné, to be a masked condition of the animal, concealing beneath its rude vermicular garb all the parts of the future perfect insect; the pupa he compared to an infant enveloped in swaddling clothes, after the old fashion. The pupa of some species of the present genus presents a singular appearance: two elevations on the head resemble horns, and a prominence upon the back represents a nose of the human face, and but little aid of fancy is required to assimilate such pupæ to a grotesque mask. Many of these pupæ are worthy of the name of chrysalids, by which they were formerly distinguished, being splendidly decorated with spots, resembling burnished gold, and silver.

VANESSA FURCILLATA.—*Specific character.* Wings angular, with a common fulvous band, and two fulvous spots on the superior wings; beneath, brown, with black lineations.

*Desc.* Superior wings above black, with a broad fulvous sub-marginal band, which is bifid at the costal margin, having the exterior division terminated by a white spot, and the inner division by a pale yellow one; between the band and the base of the wing, are two fulvous transverse spots; costal rib near the base, with yellow variegations; inferior wings above black, with a broad fulvous sub-marginal band, and on the black margin is a



allied to *polychloros* and *urticæ* of Europe, but is sufficiently distinct from either.

The plate presents two views of the insect.

### CRYPTOCEPHALUS. PLATE XXVIII.

*Generic character.* Body short, robust, cylindric; head vertical; antennæ inserted between the eyes, simple, filiform, more than half the length of the body; palpi terminating with a conic-cylindric joint, maxillary palpi very apparent.

*Obs.* Many of this group are agreeably ornamented with colored spots and lines. They were mingled with the *Chrysomelæ* by Linné, from which they may be known by the more cylindrical form of the body, and by the abrupt deflection of the head. In these characters, the present genus corresponds with *Clythra*, to which it is more closely allied than to any other; but the antennæ of *Clythra* are short and serrated, instead of being long, simple, and filiform, as in the genus before us. The genus *Cryptocephalus* was established by Geoffroy, and has been adopted by the greater number of entomologists who have written since his time. These insects feed on vegetables, and many of the species are very injurious to useful plants, by devouring their leaves and buds. The larva is furnished with six scaly feet, which are situated near the head; some of the species in the larva state protect themselves from the ardor of the sun, and from the attacks of their enemies, by fabricating a cylindrical covering, closed at one end, into which they can withdraw every part of the body; it is generally composed of small grains of vegetable and excrementitious matter, agglutinated together by a viscous excretion from the body. With the head and feet protruded from this little domicile, and carrying it erect with respect to their pathway, the artificer proceeds at a slow pace, in quest of food. The perfect insect is also slow in its movements, and on the approach of danger, it counterfeits death by retracting the feet and antennæ close to the body, and permitting itself to fall from any height to the ground.

CRYPTOCEPHALUS ORNATUS.—*Specific character.* Reddish-brown; thorax with the margin and two spots, yellow; elytra yellow, with two black vittæ on each.

*Cryptocephalus ornatus* Fabr. Syst. Eleut. pt. 2, p. 47, no. 32. Coqueb. Illustr. Icon. Insect. p. 129, pl. 29, fig. 10, a. b.

*Desc.* Body reddish-brown: antennæ black, five basal joints pale reddish-yellow; orbital line yellow: thorax with the anterior and lateral margins yellow, the edge black; base with two yellow, oblique abbreviated lines, curvilinearly united over the scutel, so as to form an arc of a circle: elytra pale yellow, with two black, abbreviated vittæ on each, and a black suture; the lateral vitta originates on the humerus, and terminates near the tip; the inner one is oblique, and becomes confluent with the suture a little beyond the middle; the common black sutural vitta includes the scutel at base, and does not reach the tip; edge all round, black; anal segment with an obscure yellow arc.

*Obs.* The *ornatus* of Herbst, in Fuessly's Archives, and of Olivier in the Encyc. Method. is quite a different insect from the present; but as that is an uncertain species, we prefer retaining the name for our insect.

This species is an inhabitant of various parts of the United States. I have found it in the middle and southern States, at the Rocky Mountains, and in the North-Western Territory. It is subject to vary, in having the exterior vitta of the elytra so widely interrupted in its continuity, as to exhibit only two remote spots.

The upper right figure.

[Not the Fabrician species according to Suffrian (Linn. Ent. 6, 241) and named by him *C. calidus*. Much confusion exists

lines on each elytron, the interior line confluent with the suture near the tip: edge all round, black: beneath rufous.

*Obs.* The similarity of this species with the preceding, is obvious, and even striking; but it is specifically distinguished by the existence of two black lines on the elytra, in place of the exterior one of that insect. I obtained several specimens near the Rocky Mountains, when with Major Long's party in that region, but it does not appear to be an inhabitant of the Atlantic States.

The upper left figure.

**CRYPTOCEPHALUS BIVITTATUS.**—*Specific character.* Yellowish-rufous, punctured; elytra yellow, with two vitta, and sutural edge black.

*Cryptocephalus bivittatus nobis*, Journ. Acad. Nat. Sciences, vol. iii. p. 440.

*Desc.* Body yellowish-rufous, punctured: orbits yellow: front with a longitudinal indented line: thorax with dense impressed punctures; lateral margin and an abbreviated obsolete dorsal line originating at the anterior edge, more distinctly yellow: scutel black: elytra irregularly and densely punctured, one or two regular series of punctures on the exterior margin; color yellow; each elytrum with a broad black vitta originating midway between the humerus and scutel, and not reaching the tip; another vitta, less dilated than the preceding, takes its rise at the humerus, and terminates a little beyond the tip of the preceding vitta; it is generally interrupted into two or three spots: beneath very pale rufous: postpectus varied with dusky.

*Obs.* I obtained this species near the Rocky Mountains, whilst descending the Arkansaw river with Major Long's exploring party. It is at once distinguishable from its companions on the annexed plate, by the confused and dense puncturation of its elytra.

The middle figure.

[This is a variety of *Pachybrachys viduatus* according to Suffrian, Linn. Ent. 7, 154.—LEC.]

**CRYPTOCEPHALUS VIDUATUS.**—*Specific character.* Black; thorax with three abbreviated yellow lines; elytra yellow, with two black vittae.

*Cryptocephalus viduatus* Fabr. Syst. Eleut. pt. 2, p. 49. No. 49.

*Desc.* Head black, with a yellowish spot at each superior canthus of the eyes, and another at the mouth: antennæ at base yellowish: front with an impressed line: thorax densely punctured; anterior and lateral margins yellow, tinged with rufous: a yellow abbreviated line commences at the middle of the anterior margin, and terminates at the middle of the disk; two distant yellow abbreviated lines arise from the basal margin, and terminate each side of the middle of the disk: scutel black: elytra yellow, with striæ of impressed punctures: two dilated black vittæ, of which one originates on the humerus, and does not reach the tip, the other is rather shorter, originating midway between the preceding and the scutel, and hardly approaching the suture at its tip; suture black: anal segment whitish; beneath black: feet rufous.

*Obs.* I obtained the specimen from which this description and the figure were taken, on the bank of the Mississippi river, above the confluence of the Ohio. Some doubts may reasonably be entertained, respecting the identity of this insect and the *viduatus* of Fabricius, on account of its smaller size, and the character of "pedibus variegatus," attributed to this insect by that author. But as the present specimen corresponds with his description in every other respect, and as the difference in magnitude may be dependent on sex alone, I have ventured to refer it to that species. It is now figured for the first time.

[Different from the Fabrician species according to Suffrian, who (Linn. Ent. 7, 227) has named it *Pachybrachys litigiousus*.

terior vitta and the scutel, it does not approach the suture at its tip; sutural edge black; the series of punctures are rather large and profoundly impressed: beneath black, punctured: feet pale testaceous.

*Obs.* This is the *C. bivittatus* of Melsheimer's Catalogue; I certainly would have adopted his name, had I not inadvertently pre-occupied it with the description of the preceding species, before I was acquainted with this insect. It can be readily perceived to be specifically distinct from either of those represented with it on the accompanying plate, by the confluent density of the thoracic punctures, as well as by its colors and their arrangement.

The lower left figure.

[Belongs to *Pachybrachys*.—LEC.]

#### SCOLIA. PLATE XXIX.

*Generic character.* Thorax with the first segment very much arcuated and contracted on the posterior middle; antennæ robust, with short close set joints; the first joint long, cylindrical; second joint distinct; superior wings not folded; radial cellule detached at tip from the anterior edge of the wing; cubital cellules two or three, the last one remote from the tip of the wing, the first one placed on the same longitudinal line with the radial cellule; eyes emarginate; stemmata three; thighs thick, arcuated in the females, compressed; tail three spined in the males.

*Obs.* A genus, in some respects, closely allied to *Tiphia* and *Plesia*, but at once distinguishable by the emarginated eyes. The thighs are remarkable for their thickness and curvature. The form of the cubital cellules varies considerably, but to a determinate and limited extent. In the distribution of the nervures of the wings, Jurine remarks, they present more remarkable anomalies, than are to be found in any other hymenopterous insects; "it would seem that nature, in circumscribing the extent of the cubital cellules, has amused herself with varying them in several respects of manner and form, supplying to one part what she retrenches from another." Latreille has availed himself of these anomalies, to form divisions of the numerous species of this genus. This author gives the following account of the species: Many of them are of a large size, and

inhabit warm and temperate climates exclusively. In Europe, the larger species begin to appear about the forty-third degree of latitude. Their metamorphosis is unknown, but Mr. Latreille supposes that their larvæ are parasitical, from the circumstance of his not having seen the parents transport larvæ, spiders, &c., to feed their young. They frequent arid, sandy places, and feed on the contents of the nectary of flowers.

*SCOLIA CONFLUENTA* [CONFLUENS?].—*Specific character.*  
Black; tergum trifasciate with yellow.

*Scolia confluenta* nobis, Western Quarterly Reporter, vol. ii. p. 74.

*Desc.* Body deep black; antennæ short, arcuated: front, occiput with yellowish cinereous hair: thorax immaculate, with yellowish cinereous hair before: wings tinged with ferruginous: nervures ferruginous: cubital cellules two, the second receiving two recurrent nervures: metathorax acutely edged and hairy above; behind concave and very rugous, with elevated, abbreviated, transverse lines, and a longitudinal one: tibiæ rugous, armed with prominent spines: abdomen, segments ciliated on the edge: tergum trifasciate with yellow; first band with a small black dot on the middle of the anterior edge; second band widely and deeply emarginated on the anterior middle, and rather abruptly narrowed on the side; third band composed of two confluent triangles, which are marked by a small black transverse dot near the exterior angle of each.

*Obs.* This fine species inhabits Arkansaw; it agrees with the

recurrent nervures: feet rufous: tergum dusky rufous, with four transversely oval bright yellow spots on each side, of which the anterior one is very small, and the posterior one is nearly extended into a band.

*Obs.* Inhabits various parts of the Union, and is not uncommon in Pennsylvania. The wing cells are remarkable; the intermediate cubital cellule having two recurrent nervures.

The lower figure.

*SCOLIA TRICINCTA.*—*Specific character.* Black; collar with two yellow spots; scutel with one yellow spot; tergum trifasciate with yellow.

*Scolia tricineta* nobis, Western Quarterly Reporter, vol. ii. p. 74.

*Desc.* Body black: front with obscure yellowish hair: mandibles rufous at base: collar with a yellow spot on each side, sometimes united: squammula rufous: scutel with a small yellow spot: feet rufous: superior wings dusky on the costal tip, nervures ferruginous: cubital cells two, the second receiving one recurrent nervure: tergum with three yellow bands, of which the first and second are nearly, or, quite interrupted in the middle each into two oval spots; first segment with an obscure piceous band.

*Obs.* The terminal nervure of the radial cellule is so perfectly transverse, that the cellule has not the usual appearance of being separated at tip from the costal edge of the wing. The species is, notwithstanding this anomaly, a true *Scolia*.

The middle figure.

#### PIERIS. PLATE XXX.

*Generic character.* Feet nearly equal; nails of the tarsi very apparent, bifid or unidentate; inferior wings dilated beneath the abdomen, so as to form a groove.

*Obs.* This is one of the many genera into which the vast and sumptuous genus *Pupilio*, of Linné, has been separated. We are indebted for it to Schrank. It nearly corresponds to the group of *Danaï candidi*, and includes the genera *Colias*, and *Pontia* of Fabricius, and *Gonepteryx* of Leach.

These butterflies are natives of various regions of the globe: some of them are very frequent in almost every field, and must

have been noticed by the most casual observer, flitting with a devious direction over the herbage, and on meeting with a companion mounting aloft in the air, with a hurried and irregular movement. Some species occasionally alight in great numbers on moist places in roads.

The caterpillar is destitute of the retractile tentacula of the neck, and the chrysalis is of an angulated form, attached to a fixed object a by thread passed around the body, the head being upward.

**PIERIS NICIPPE.**—*Specific character.* Wings slightly crenate, fulvous; terminal margin black-brown; upper pair with a black abbreviated line before the middle on each page; inferior pair with abbreviated ferruginous lines and spots.

*Papilio nicippe* Cramer, tab. 210, fig. C, D. Herbst, Natur. Ins. pt. 5, p. 176, pl. 107, fig. 3, 4.

*Desc.* The black terminal margin of the upper wings extends along the costal margin nearly to the middle; the black transverse line on this pair of wings is very short, and consists of two curvatures; this curvilinear line appears also on the inferior surface, which is yellow, very slightly tinged with fulvous on the disk, with a blackish point at each indentation of the edge, and an ovate bright fulvous spot near the base; the black terminal margin of the inferior wings has a prominent undulation in the middle; the inferior surface of this pair of wings is yellow, marked by numerous brownish or ferruginous abbreviated transverse lines, a minute black point in the centre of the wing, and two or



## REDUVIUS Fabr., Latr. PLATE XXXI.

*Generic character.* Body not linear; thorax sub-bilobate; rostellum arcuated, three-jointed, middle joint longest: antennæ inserted above a line drawn from the eyes to the base of the rostrum; tibiæ simple.

*Obs.* Linné placed the species in the same genus with the common and well known "bed-bug," from which, however, they are without doubt very distinct. Under the reforming hand of Fabricius, they were established as a separate group, with the present designation. These insects are carnivorous, and live by rapine in all their states. They seize smaller insects, and suck out their fluids. The collector must be very cautious how he handles these insects, as they are apt to inflict a painful puncture with their very pointed beak. When disturbed they emit an acute sound, by the friction of the base of the head or the neck against the thorax.

REDUVIUS NOVENARIUS.—*Specific character.* Blackish; antennæ and rostellum rufous: thorax crested, crest eight or nine-toothed.

*Desc.* Brownish liver color, with very short hair; head cylindrical, a profoundly impressed transverse line between the eyes: a spine behind each antenna inclining forwards: antennæ rufous; rostellum dark rufous, first joint more than half the whole length of the organ; thorax with a short robust spine each side at the base of the head: crest prominent, with eight or nine cylindrical, rather distant teeth: lateral angles bidentate, posterior tooth largest: posterior margin crenate, with two prominent, terminal spines: hemelytra, membranaceous portion, brassy: feet simple, rather long; tibiæ tinged with rufous.

*Obs.* This large and fine species is not uncommon in various parts of the Union, at least from Pennsylvania to the southern boundary. Its puncture is very painful, benumbing the vicinity of the wounded part, for a considerable time.

Its great similarity to the *R. cristatus* of South America, has hitherto induced entomologists to identify it with that species; but having carefully considered their respective characters, I am of opinion that they are distinct, though certainly very closely allied. The *cristatus* has at least twelve denticulations to its

crest, and its pale rufous tibiæ, strongly contrast with the femoral color

The upper right figure of the plate.

**REDUVIUS CRASSIPES.**—*Specific character.* Blackish; thorax and abdomen margined with reddish; feet thick.

*Reduvius crassipes* Fabr., Syst. Rhyng. p. 273.

*Desc.* Body villous; posterior lobe bituberculate: thorax margined all around with red; anterior lobe with a triangular central indentation; scutel with a red band beyond the middle: hemelytra with a reddish humerus; coriaceous portion with two or three obsolete reddish points at tip; membranaceous portion much deeper black; tergum with red triangular spots on the incisures at the lateral margin: pectus with a spot above the insertion of each foot, and coxæ red: venter margined each side with red.

*Obs.* This species was obtained by Bosc, in Carolina, and was described from his collection by Fabricius. I found the specimen in Arkansaw.

The lower right figure.

**REDUVIUS SPISSIPES.**—*Specific character.* Thorax and hemelytra light reddish-brown, edged behind with whitish; feet thick.

*Reduvius spissipes* nobis, Journ. Acad. Nat. Sci. vol. iv. p. 328.

*Desc.* Head black, posterior lobe with two tuberoles: thorax light reddish-brown; anterior lobe with dilated, black, oblique, or arcuated lines, of which some are confluent; posterior lobe hardly

*Reduvius raptatorius* nobis, Journ. Acad. Nat. Sci. vol. iv. p. 327.

*Desc.* Body oblong, obscure brownish; head with a deeply impressed line above the eyes, spinous; six larger spines before the impressed line, placed two and two, and two or four larger ones behind the line: stemmata sanguineous; eyes inserted in the lateral middle of the head: antennæ inserted near the tip of the clypeus, with dilated annulations of dull rufous and pale; rostellum slightly arcuated, pale: thorax with numerous, short, obtuse spines on the anterior lobe, and dense granulations on the posterior lobe: posterior angles hardly prominent; feet somewhat pale, sub-annulate, granulated: anterior pair raptatory; thighs unequal, anterior pair robust, villous, dusky, armed with an erect, prominent, obtuse spine, near the tip above, and a double series of ten equal, equidistant, acute spines beneath; anterior tibiæ with a double series of six similar spines on the inner side; tergum rufous on the disk, margin varied with black and pale; hemelytra on the membranaceous tip, with a longitudinal reddish-brown line.

*Obs.* This may possibly prove to be the *R. diadema* Fabr. It is common in many parts of the Union, and I found it not uncommon in Missouri, as well as in Pennsylvania.

The upper left figure of the plate.

#### TREMEX. PLATE XXXII.

*Generic Character.* Antennæ setaceous, inserted on the front, thirteen or fourteen jointed; mandibles robust, short, denticulated; labial palpi terminated by a thick, hairy joint; superior wings with two radial cellules, the second incomplete, and two cubital cellules, of which the first is very large, receiving the two recurrent nervures, the second incomplete, not attaining the end of the wing; abdomen sessile, terminating in a point; oviduct exerted.

*Obs.* This genus is very similar to *Sirex*, from which it was separated by Jurinc. It may be distinguished by the smaller number of joints in the antennæ, as well as by the number and form of the cellules of the wings.

**TREMEX SERICEUS.**—*Specific character.* Ferruginous: tergum yellowish-sericeous.

*Tremex sericeus* nobis, Western Quarterly Reporter vol. ii. p. 73.

*Desc.* Body ferruginous, punctured; head with three indented longitudinal lines on the vertex, and a transverse one between the eyes; antennæ yellowish; thorax scabrous before, disk with a black spot on each side: wings brownish-fuliginous: carpus yellowish: feet pale yellowish: thighs ferruginous: tergum pale yellowish-fulvous, sericeous: pectus, above the posterior feet, black.

*Obs.* The specimen is a female. I obtained it in Missouri, whilst engaged in the exploring expedition under the command of Major Long.

The upper figure.

TREMEX OBSOLETUS.—*Specific character.* Ferruginous; tergum black.

*Tremex obsoletus nobis*, Western Quarterly Reporter, vol. ii. p. 73.

*Desc.* Body ferruginous, punctured: head with three obsolete indented lines upon the vertex, and a transverse one between the eyes: antennæ pale ferruginous: thorax scabrous before, with a black spot on each side of the disk: wings yellowish brown, hyaline; carpus rufous; posterior tibiæ and tarsi, black at their tips; tergum black, polished; segments, particularly those near the base, with an obsoletely rufous spot on each side, more distinct on the fourth segment.

*Obs.* Taken in the same region with the preceding. The number of cubital cellules do not correspond with the definition of the genus, as we have here adopted it. There are, in fact,

tennæ black, four basal joints pale ferruginous, two terminal joints fulvous: thorax ferruginous, sutures blackish: wings blackish: carpus ferruginous: tergum deep black; first segment with a small obsolete spot each side, yellow; second segment yellow, with an inconspicuous longitudinal black line; remaining segments with an oblong-triangular yellow spot on the base of each; terminal spine, and valves of the oviduct, ferruginous: pectus black, a large ferruginous spot beneath the anterior wings: feet pale ferruginous; thighs above, and posterior pair entirely, black: venter, with the segments slightly tinged with piceous.

*Obs.* The specimen above described, was taken on the bank of the Missouri river. It inhabits many parts of the Union, and is a very fine species.

The right figure.

#### PANGONIA. PLATE XXXIII.

*Generic character.* Wings divaricated; antennæ porrect, approximate, three-jointed; first joint cylindrical, second cyathiform; third joint elongated, subulate, eight-ringed; proboscis elongated, exerted; stemmata three: abdomen of seven segments.

*Obs.* This genus is very closely allied to *Tabanus*, the species having a close resemblance to each other; but, on accurate comparison, we shall agree with Latreille in the propriety of separating them. In fact, the *Tabani* are altogether destitute of the stemmata, and are very different from insects of the present genus in several other characters, such as the form of their antennæ, the disposition of the nervures of their wings, and the comparative length of their proboscis. In some of the species, the stemmata are so small as to require a lens to discover them, but they certainly exist in all. Six species are described by Meigen as inhabiting Europe; and five extra Europeans are described by Wiedemann.

These insects are inhabitants of warm climates, and are said to subsist upon the honey of flowers; but Meigen suspects that their females feed on the blood of animals, like those of the species of other genera in this family.

*PANGONIA INCISURALIS.*—*Specific character.* Thorax dusty

glaucous, with dirty yellowish hair; abdomen dark chestnut, with whitish incisures.

*Pangonia incisuralis* nobis, Journ. Acad. Nat. Sci. vol. iii. p. 81.

*Desc.* Front ochreous: ocelli distinct: hypostoma dusky: palpi: and setæ of the proboscis testaceous: proboscis black: antennæ pale yellowish: occiput with very short, greenish-yellow hair: thorax with two distinct obsolete lines: wings reddish-brown: feet yellowish: thighs dark chestnut at base: tergum and venter ♀ dark chestnut, polished, the posterior margins of the segments whitish, and slightly hairy; ♂ pale testaceous, with short hair.

*Obs.* This is the only species yet known to inhabit North America. It was brought from Arkansaw by Mr. Thomas Nuttall.

The upper figure exhibits the appearance of the male, and the lower that of the female.

#### GRYLLUS. PLATE XXXIV.

*Generic character.* Antennæ filiform, with from twenty to twenty-five joints; hemelytra and wings deflected, the latter large, much folded; posterior feet formed for leaping, hardly longer than the body; tarsi three-jointed; oviduct not exerted; stemmata unequidistant.

*Obs.* Insects of this genus are well known to every person in this country by the familiar and characteristic name of "grass-hoppers." They are in some seasons very abundant, and become

of a few hours are said to change the most fertile provinces into a barren desert." During their migrations in search of food, they move in immense dense masses, which resemble huge thunder or hail clouds, and at the termination of their career, every leaf is soon devoured, and the atmosphere is finally loaded with putrid exhalations from their dead bodies, producing pestilence in the train of a general famine, which is the consequence of their voracity.

Swarms of these animals have appeared in various parts of Europe, from Tartary, and small flights have made their way even into England. A species of this genus occasioned so much destruction in some parts of Europe, that in the year 1813 the French government issued decrees with a view to the destruction of the larvae. Although the thickly settled parts of the United States are altogether unacquainted with the scourge of any species of migratory locust, yet we shall have occasion at a future time, to speak of several species found within the limits of our territory, that have already proved a very serious evil.

There seems to be little doubt, that a species, probably the *G. migratorius*, constituted one of the plagues of Egypt mentioned in the Bible; and that John the Baptist was compelled to use them for food during his sojourn in the wilderness.

Even at the present day, the inhabitants of divers countries of Africa, make great use of these destructive insects for food. For this purpose, the insect requires but little preparation, and we believe the hemelytra and wings are always rejected, whether it is to be eaten fresh, or salted. In the latter state, they are constantly exposed for sale in the markets of the Levant, and they are known to be a considerable article of commerce in that region.

Many travellers assure us that they constitute an agreeable food; according to Shaw, when fried with a little salt, they have the taste of the Cray-fish, a crustaceous animal like a miniature lobster, abounding in our fresh water streams. Some of the Arabs are stated by Niebuhr, to preserve large quantities of these insects in the dried state, for winter consumption.

The *Gryll* feed exclusively on vegetables. They fly with a considerable strength of wing, and some species make a noise when they poise themselves in the air previously to alighting, by striking the hemelytra together. During their several changes,

they continue active and voracious, and their gait is always either a leap or a walk. In the larva state, they are destitute of any appearance of wings or hemelytra, but on changing to the pupa, they gain the rudiments of those members, to be completely developed at the next change.

**GRYLLUS FORMOSUS.**—*Specific character.* Thorax with a much elevated, compressed, and denticulated carina.

*Desc.* Body pale green: antennæ yellowish: thorax armed with numerous small denticles, above compressed, very much elevated into a regularly arcuated carina, forming a portion of a circle, the centre of which is anterior to the origin of the hemelytra; carina with two yellow radii, and yellow posterior and anterior edges; posterior half of the edge, prominently denticulated: hemelytra with about six large brown spots, with areolæ, placed 2, 2, 2: posterior thighs annulate, with yellow.

*Obs.* When returning with a detachment of Major Long's party, at a distance of about an hundred and fifty miles from the mountains, on the banks of the Arkansaw river, I had the pleasure to find a considerable number of this uncommonly beautiful species. It occurred only in a very limited district, and was not afterwards seen.

The middle figure, with a wing above on the left.

**GRYLLUS HIRTIPES.**—*Specific character.* Head conic, posterior segment of the thorax elevated into a carina.

*Desc.* Body pale green: head above conic, elevated, with dark green lines: antennæ red: thorax varied with dark green; pos-



*Desc.* Head green: antennæ blackish, first and second joints pale; triangular space between the eyes, brown, extending in a curved line backwards and downwards: thorax greenish-brown, above depressed, on the two anterior segments an inconspicuous, hardly elevated, longitudinal line: hemelytra pale dull yellowish, at base brownish, nervures at tip, dusky; three equidistant broad brownish-black bands, the intermediate one on the middle: wings pale yellow, with a slight tinge of green; a broad brownish black band, narrowed and marginal behind; tip dull whitish, with the nervures blackish: posterior thighs dull yellowish, with a black band on the middle, on the inner side, extending broadly towards the base; tip blackish: posterior tibiæ bright fulvous.

*Obs.* This pretty insect occurred in Arkansaw, at the distance of about three hundred miles from the Rocky Mountains.

The lower figure.

#### HETEROMYIA. PLATE XXXV.

*Artificial character.* Antennæ porrect, filiform, fourteen jointed; five terminal joints elongated; palpi exserted, a little arcuated, four jointed; basal joint shortest, a little contracted in the middle; ocelli none; eyes reniform; posterior feet much elongated, slender, and with a single nail at tip; anterior pair with somewhat elongated coxæ, and much dilated femora, armed with a series of short spines on the anterior edge, on which the arcuated tibia closes.

*Natural character.* Body moderately slender; head small, rounded, flattened before; antennæ in the middle of the face; first joint large, but not long; the eight following joints sub-oval; the five terminal joints long, not dilated, cylindric, each being twice the length of one of the preceding ones; eyes reniform, large, wider beneath, and approaching above; stemmata none; palpi arcuated, four jointed, first joint shortest, last joint longest; proboscis shorter than the head; thorax sub-globular, convex above, and projecting a little forward acutely before; beneath convex; scutel transverse; wings moderate, somewhat lanceolate; poisers naked; feet unequal; anterior pair with the coxæ somewhat elongated; thighs dilated, and with a series of spines on the lower side; tibiæ arcuated, accurately closing on the inferior surface of the thigh; tarsi moderate; intermediate

pair slender, longer than the anteriors; third pair longest, slender, the tarsi elongated, terminated by a single long and slender nail.

*Obs.* This genus is closely allied to *Tanypus*, *Chironomus*, and *Ceratopogon*, but it differs from them by the remarkable conformation of the anterior and posterior feet.

[This genus appears to be one of the numerous forms of *Ceratopogon*. Mr. Winnertz in his excellent Monograph of this genus (Linnæa Entomologia, 6,) did not subdivide it into new genera, but among the forms he mentions several which are very like *Heteromyia*. Some of them have one claw of the tarsi much shorter than the other, approaching by this character *Heteromyia*, which according to Say has but one claw on the posterior tarsi. It is strange that Say does not describe the antennæ of the male. —SACKEN.]

*HETEROMYIA FASCIATA*.—*Specific character.* Wings hyaline, trifasciate with dusky.

*Desc.* Body testaceous: thorax with a black disk: wings with three equidistant bands, the two exterior ones somewhat confluent: posterior thighs a little dilated towards the tip: abdomen with a silvery sericeous reflection; ♂ cylindrical, ♀ dilated towards the tip.

Variety *a.* Thorax entirely testaceous.

*Obs.* The manners and habits of this insect are unknown, though it is of rather frequent occurrence.

many are beautifully ornamented with eye-like spots. The caterpillar is downy and bimucronate behind. The pupa is suspended by the tail; it is angulated, bimucronate on the front.

*HIPPARCHIA ANDROMACHA*.—*Specific character*. Wings brown, with sub-marginal blackish spot; beneath paler, sub-perlaceous, with a series of ocellate spots.

*Oreas marmorea Andromacha* Hubner.

*Desc.* Body above, and the superior surface of the wings, brown: anterior wings beyond the middle, with a broad paler band, bifid before, and including a series of four fuscous oval spots, or epupillate ocellae, of which the second, and sometimes the third, are small, and the posterior one largest; between the band and the exterior edge is a single narrow pale line, sometimes obsolete; exterior edge alternately white and black: posterior wings with a narrow, fuscous, angulated line across the middle, and a broad pale band beyond the middle, in which is a series of five fuscous epupillate ocellae, with a yellow iris, the third smallest, then the fifth, the first being largest; exterior margin slightly tinged with rufous, and with one or two fuscous lines: beneath perlaceous, with a brown narrow band before the middle, and another rather beyond the middle; beyond which, is a broad lighter perlaceous band, in which, on the superior wings are four epupillate ocellae, the two or three anterior ones small; and on the inferior wings are six ocellate spots, consisting of a fuscous spot surrounded by a yellow line, and having a white pupil; first spot distant, third small, fifth double; exterior margin with a yellow line.

*Obs.* Two specimens of this insect were presented to me by Mr. Thomas Nuttall, who obtained them in Arkansaw. It seems probable, that they also inhabit the southern Atlantic States, as Hubner has given a plate of the insect. It has not been found so far north as Pennsylvania.

#### SPECTRUM. PLATE XXXVII. and XXXVIII.

*Generic character.* Body elongated, slender, cylindrical; head slightly inclined, oval; antennae long, slender, with numerous joints, inserted before the eyes; palpi cylindrical, short; labium quadrifid, the two inner divisions shortest; feet simple, the ante-

rior pair being similar to the others; tarsi five-jointed; elytra very short or none.

*Obs.* We are told that there was a time, when a piece of wood was transformed into a serpent, and even in the present age of knowledge, a hair fallen from the mane or tail of a horse into a stream of water, is believed by many to become animated into a distinct being; dead leaves shed by the parent tree are said to change gradually into animals of singular shape, and to have changed their place of abode under the eye of the historian who related the wonderful tale; dead sticks also were said to sprout legs, to move from place to place, and perform all the functions of a living body. These, and a thousand other equally ridiculous tales, were at one period or another, more or less generally admitted as indisputable truths, and to contradict them would only be to expose oneself to the imputation of ignorance or criminal faithlessness. And although at present the possibility of making a living serpent out of wood, and the story of animated leaves and sticks would be despised as absurd, yet many are to be found, both in Europe and America, who firmly believe in the reanimation of a horsehair. But the most obvious errors have often a shadow of truth whereon to rest, or palliate, if not excuse them by the plea of ignorance or mistake. The historian of the walking leaf may have been deceived by the *Mantis sicotifolia* of Linné, the wings of which have some resemblance to a leaf. The *Gordius* resembles a horsehair, and no doubt gave rise to the story of the metamorphosis above mentioned, and the account of the walking sticks may have very honestly originated from the

*Desc.—Male.* Body greenish-brown, without any rudiment of hemelytra; head yellowish with three dilated fuscous vittæ; antennæ brown: anterior thighs unarmed, simple, bright green: tibia dull green, tip and tarsus testaceous; intermediate thighs dilated, angulated, pale ochreous, annulated with brown, the inferior angulated lines slightly serrated; a prominent, piceous, acute, robust spine beneath near the tip; tibiæ greenish, slightly serrated on the inner side; tarsus testaceous; posterior thighs brownish, ochreous, with a prominent, piceous, acute, robust spine near the tip beneath.

*Female.* Body cinereous, more robust than that of the male: thighs nearly equal, intermediate and posterior pairs with the subterminal spines very short.

*Obs.* I first published an account of this species in "Long's second Expedition," from a male specimen obtained near the Falls of Niagara on a Hickory tree. I had previously found an individual in Missouri, and recently on a journey with Mr. Macture, I found several specimens on the sheltered face of a rock at Franklin, New Jersey; amongst these was the female which we now make known.

Since the above was written, Mr. Charles Pickering, of Salem, Massachusetts, has informed me that he obtained an individual near that city.

The left figure of the plate represents the female.

The right hand figure, the male.

**SPECTRUM BIVITTATUM.**—*Specific character.* Brown or blackish, with two yellow dorsal vittæ.

*Desc.—Male.* Body above black, with two broad yellow vittæ extending from the base of the antennæ to the posterior extremity of the body: antennæ dull reddish brown, not much elongated: beneath dull yellowish clay color: feet dusky, thighs unarmed, blackish towards the tip.

*Female,* much larger than the male, the body brownish in those parts which on the male are black, with the exception of the vertebral line which is black; the yellow vittæ become sometimes obsolete towards the posterior part of the body: thighs unarmed.

*Obs.* The disparity of size between the sexes of this species, would almost lead us to doubt their specific identity, or at least

it would induce us to believe that the diminutive male is no other than the young of the female he accompanies as a mate.

On a journey to Florida with Mr. Maclure, I obtained a female which was crawling up the body of an Orange tree on Cumberland Island, Georgia. The male I had not seen until the recent return of Mr. T. Peale from that country, who brought many individuals of both sexes. He observed them in plenty in the southern part of that region. They were generally in pairs, on the Palmetto, lying close to the rib of the leaf. Mr. Peale remarked that when taken they discharge a milky fluid, from two pores of the thorax, diffusing a strong odor, in a great measure like that of the common *Gnaphalium*, or "Life everlasting;" and as this plant was growing near the place where they occurred, he supposed that it constituted at least part of their food. They vary much in color, but it is believed that the two dorsal yellow stripes are never wanting.

The upper figure of the plate represents the male.

The lower figure, the female.

#### LANGURIA. PLATE XXXIX.

*Generic character.* Body rather slender, cylindrical; antennæ with a gradually formed club of five or six joints; palpi filiform, terminal joint of the labials a little larger than the others; mandibles bifid at tip; maxillæ with horny teeth; tarsi with dense hairs beneath the three basal joints, the third bilobate.

*Obs.* The manners and habits of these insects are but little

latter species, he expressly states, that in its elongated and cylindrical appearance it differed from *Tenebrio*, and that it ought perhaps to form a distinct genus. Latreille finally established a genus under the name we have adopted, in his "Histoire Naturelle des Crustacés et Insectes," for the reception of the *bicolor*. In his "Genera Crustaceorum et Insectorum," he described another under the name of *L. Mozardi*; and in the pages of the "Journal of the Academy of Natural Sciences of Philadelphia," I increased the number to six, by the publication of two new species.

**LANGURIA BICOLOR.**—*Specific character.* Black, slender: thorax rufous, with a dilated black vitta.

*Trogosita bicolor* Fabr. Syst. Eleut. part 1, p. 152.

*Languria bicolor* Latr. Hist. Nat. Crust. et Ins. 12, p. 85. Genera Crust. et Ins. 3, p. 65. pl. 11, fig. 11. Lam. An. sans Vert. 4, p. 289.

*Desc.* Body piceous-black, slender: head dark piceous, with very obvious punctures: thorax pale yellowish-rufous, with obvious, rather distant punctures, and a dilated vitta of a dark piceous color, occupying about one-third of the surface: elytra black, with strongly impressed striæ of punctures: pectus pale yellowish rufous: postpectus black: feet blackish-piceous: venter piceous.

*Obs.* It may be distinguished from the *puncticollis*, to which it is perhaps most closely allied, aside from its colors and more elongated form, by the obvious punctures of the head and thorax, as well as by the more deeply impressed punctures of the striæ and the approximation of the striæ to each other.

The lowest figure of the plate.

[Latreille was the first to apply the name of Fabricius to this species with which his description by no means agrees: other authors have copied his error. I have named it *L. Latreillei*; vide Proc. Acad. Nat. Sci. Phil. 7, 160.—LEC.]

**LANGURIA MOZARDI.**—*Specific character.* Rufous; antennæ, elytra, and feet black.

*Languria Mozardi* Latr. Genera Crust. et Ins. 3, p. 66. Lamarck An. sans Vert. 4, p. 290.

*Desc.* Body pale rufous, glabrous: antennæ dark piceous: thorax immaculate: elytra punctured; the punctures placed in

regular series, deeply impressed, but without impressed strise: feet black; thighs pale-rufous at base, tibiæ with a slight rufous tinge: venter with the three posterior segments black.

*Obs.* This species was first described by Latreille in his elaborate and important work entitled "Genera crustaceorum et insectorum." The specific name is that of the donor. The *Mazardi* has not been hitherto figured.

The left figure of the plate.

LANGURIA PUNCTICOLLIS.—*Specific character.* Rufous; antennæ, thoracic spot, elytra and feet black.

*L. puncticollis* nobis, Jour. Acad. Nat. Sci. 8, p. 462.

*Desc.* Body rufous: antennæ and palpi black: thorax with a small, round, black spot on the middle, and an abbreviated, indented line upon the basal margin each side of the middle; elytra with rather slight strise of impressed points, black, slightly tinged with blue: feet entirely black: venter, terminal segment, black.

*Obs.* I obtained this species on the bank of the Mississippi river, above the confluence of the Ohio. It somewhat resembles *L. bicolor* Fabr., but is more robust.

The upper figure of the plate.

LANGURIA TRIFASCIATA.—*Specific character.* Rufous; head black: elytra bifasciate with violaceous.

*L. 3-fasciata* nobis, Jour. Acad. Nat. Sc. iii. p. 462.

*Desc.* Body rufous, punctured: head black: antennæ, with the third, fourth, fifth, and sixth joints dull rufous: thorax



tery, Linné divided his vast genus *Papilio* into several families, of which he named the first Equites or Knights. This family, containing some of the largest and most beautiful of the insect tribes, was subdivided into Trojans and Greeks. The former were distinguished by red spots on the breast.

The *P. Philenor* which we have already represented, belongs to the division of Trojans. But this arrangement has been abandoned by modern authors, who apply the name of *Papilio* only to the Linnæan *Equites*, subdividing the genus into those which have the inferior wings elongated behind in the form of a tail, and those which have them simply rounded in that part.

Much has been said and written relative to the acuteness of the sensation of pain in insects, and whatever may have a tendency to prevent acts of wanton barbarity ought certainly to be encouraged, as far as it is conformable to truth, but not further. The poet's assertion, that the worm, crushed beneath the foot of the passenger, "feels a pang as great as when a giant dies," cannot be substantiated, and proves nothing, therefore, but that the author declared positively what he merely believed or imagined to be true. My opinion, to the contrary of all this, is founded on such facts as the following. I caught an insect belonging to the present genus, and having impaled it, by passing a pin vertically through its body, it escaped from my hand. The pin being light, and no injurious pressure having been exerted on its body, the insect flew, apparently with its usual facility, to a flower, and unrolling its elongated proboscis, proceeded to extract the sweet fluid from the nectary, as if no mortal wound had been inflicted.

The plant represented in the plate, is the *Aquilegia canadensis*.

**PAPILIO TURNUS.**—*Specific character.* Wings tailed, yellow with a black margin and abbreviated bands; angle of the tail fulvous.

*Papilio Turnus* Linn. Fabr. Goeze, Entom. Beytr. iii. p. 71. Herbst. Naturst. Ins. iii. p. 136, pl. 41, fig. 3, 4. Hubner, pl. fig. 1, 2. Palis. de Beauv. p. 119, pl. 2, b. fig. 1, 1.

*Papilio caudatus maximus* Carolinianus, Umbris striisque nigris. Catesb. Carolina, 2, pl. 83.

*Papilio Alcidas* Cram. i. p. 62, pl. 38, figs. A, B.—Goeze, Entom. Beytr. iii. p. 77.

*Der Kaiserschmetterling* Muller, Nat. Syst. Supp. p. 284 and 496. (Herbst.)

*Desc.* Body above black, with a yellow line each side, passing over the origin of the wings, and over the head each side before the eyes: superior wings yellow, costal margin black with four black bands, of which the three exterior ones are abbreviated; exterior broad margin black with a series of small white spots and white crenulations on the edge: beneath, the colors are paler, and the dots of the exterior margin are much larger: inferior wings yellow; posterior portion black, with six lunules on the margin yellow, the first and last fulvous, the edge deeply crenated, the crenations white; anal angle fulvous edged with white, and with a bright green lunule above, and one or two green spots near it; disk, with an oblique black band, proceeding from the basal band of the superior wings, abbreviated near the black portion of the wing, and curving round and returning upward along the inner margin: tail moderate; beneath somewhat like the superior page, but the radiating lines proceeding from the discoidal cellule are black, the marginal lunules are much larger, and have a large fulvous spot in the middle of each, the black portion is much tinged with green, and there are about four fulvous spots above it: pectus yellow, with two oblique lateral black lines.

*Obs.* This beautiful, though very common insect, has already been noticed by many authors, who, for the most part, unite their testimony in favor of its similarity to the *P. Machaon* Fabr., of Europe. This correspondence is, however, only a general one,

the circumstance that the ultimate joints of the antennæ, only, form a serrated mass, and that the tarsi have but four very obvious joints. Dejean mentions but two species as inhabitants of Europe; we have here given four species, but it would seem that the genus might be divided with advantage to the student, for whose convenience also it ought perhaps to be removed to the *Tetramera*, together with several kindred genera.

**ENOPLIUM ONUSTUM.**—*Specific character.* Black; thorax red, with two black lines; elytra margined with yellowish.

*E. marginatum* nobis, Journ. Acad. Nat. Sciences, iii. p. 187.

*Desc.* Body black, hairy, punctured: labrum and basal joints of the palpi, pale: thorax red, with two dilated longitudinal black lines confluent behind: elytra with a yellowish margin, suture and base: thighs pale.

*Obs.* This insect frequently occurs in Pennsylvania: I have also obtained it in the State of Ohio, and Mr. John P. Braoe, of Connecticut, presented me with an individual taken in that State. It resembles the *E. pilosum* Forst., but is readily distinguished by the yellowish margin of the elytra.

I have been informed by Count Dejean, that the specific name *marginatum*, is preoccupied in this genus, I therefore substitute the present appellation.

The upper left figure of the plate.

[This is a variety of *E. pilosum*.—LEC.]

**ENOPLIUM PILOSUM.**—*Specific character.* Black; thorax red, with two black lines.

*Lampyris pilosa* Forst. Nov. Ins. p. 49.

*Desc.* Body shining black, covered with very short hairs, punctured: labrum dull testaceous: thorax bright sanguineous, with two broad longitudinal black vittæ approaching each other to the posterior margin, where they are confluent; anterior margin yellowish, interrupted by the black vittæ; elytra entirely black, opaque, immaculate; wings black.

*Obs.* The very great similarity between the preceding and the present species, would almost persuade us that they are merely varieties of one species; nevertheless, as they seem to be constant, in their respective characters, we consider them as distinct, though closely allied species.

The lower right figure of the plate.

**ENOPLIUM DAMICORNE.**—*Specific character.* Black; thorax rufous, slightly edged with black.

*Tillus damicornis* Fabr., Syst. Eleut. i. p. 282.

*E. thoracicum* nobis, Journ. Acad. Nat. Sciences.

*Desc.* Body black, hairy, punctured, cylindrical: antennæ with the terminal joint narrowed near the tip on the inner side: thorax rufous, lateral and posterior edges black: pectus rufous: elytra black with a slight purplish tinge, immaculate; punctures large, profound, approximate, and behind the middle small, confluent.

*Obs.* This insect is an inhabitant of the greater part of the Union. I have obtained specimens in Missouri. In my account of the species as above quoted, I made the following remark: "I should consider it the same as the *Tillus damicornis* of Fabr. but that, in the description of that insect, the author mentions but two dilated joints of the antennæ, whereas in ours there are three dilated joints." Notwithstanding this remark, it agrees with it so well in other respects, that on further consideration, I think we may safely refer it to the *damicorne*, and admit that Fabricius was mistaken in the number of dilated joints. Latreille, in his *Histoire Naturelle*, &c. observes, that "Le tille damicorne de Fabricius diffère peu, or presque point de cette espèce, (*E. Webers*) a en juger par les phrases spécifiques."

The upper right figure of the plate.

[Belongs to *Orthopleura* Spin.—LEC.]

**ENOPLIUM QUADRIPUNCTATUM.**—*Specific character.* Black; elytra sanguineous, with four black dots.

## POMPILUS. PLATE XLII.

*Generic character.* Labrum inserted under the nasus; eyes entire; stemmata three; antennæ as long as the head and trunk, in the female convoluted towards the tip; mandibles unarmed, or with one or two teeth; maxillary palpi longer than the labials, three last joints nearly of equal length; superior wings not folded longitudinally; radial cellule of moderate size; cubital cellules three, the first elongated; second and third subequal, nearly square, receiving the two recurrent nervures; fourth cellule rudimental; feet elongated.

*Obs.* These insects associate by pairs, and make their nests in the earth. The female digs a hole in a sunny bank or declivity; when this is accomplished, she goes in search of a spider or a caterpillar, which she punctures with her sting, and places at the bottom of her nest. Having deposited an egg, either in or upon the prey, she closes the hole with earth, and abandons it. The young, hatched from the egg, has an abundant and convenient supply of food, in the body of the interred insect. Descending the Arkansas river, with Major Long's party, I was one day surprised to see a species of this genus, dragging along the ground the body of the gigantic Bird-catching spider, the *Mygale aricularia*, or a very closely allied species.

These insects are lively and active, flying rapidly from place to place for short distances, running briskly on the earth, vibrating their antennæ, and raising a little, and then depressing their wings, which are reclined upon the back.

The female is armed with a sting, and may be distinguished from the male by having twelve joints to the antennæ, whilst those of the male have thirteen joints.

Latreille was the first to separate this group from *Sphex*, under the name of *Pammochares*, but in his subsequent works, he adopted the more recent name of *Pompilus*, given by Fabricius.

**POMPILUS FORMOSUS.**—*Specific character.* Polished bluish-green; wings rufous, with a dusky terminal submargin.

*Pompilus formosus nobis*, Western Quarterly Reporter, ii. p. 76.

*Desc.* Body bright greenish, a little tinged with bluish, and in some lights changing to dull purplish, sericeous: antennæ black: feet black with a green reflection: wings bright golden

rufous; at the extreme base, black; terminal submargin of the superiores, and terminal and inner submargins of the inferiores, dusky; the corresponding margins pale.

*Obs.* This large and splendid species occurred within a hundred miles of the Rocky Mountains, on the banks of the Arkansas river. It was not uncommon, and in consequence of the striking color of the wings, as well as of its slow and steady flight, it was readily observed and taken. It was occasionally found perched on flowers, in company with *Stilus grandis* nobis, and other Hymenopterus insects. The strongest similarity certainly exists between the *P. formosus* here represented, and the *Pepsis marginata* Beauv., but that species is so much larger, that we cannot believe it to be the same.

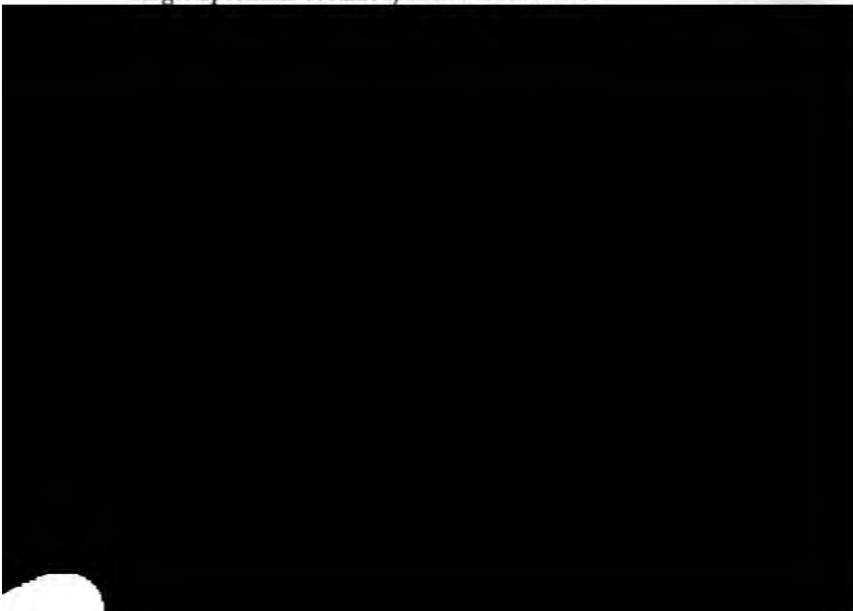
The upper figure of the plate.

[This species extends as far as San Diego, California.—Lzo.]

POMPILUS UNIFASCIATUS.—*Specific character.* Black; antennæ and large wing spot, yellow.

*Desc.* Body black, tinged with purplish: antennæ, excepting the first and second joints, bright yellow: wings violaceous-black; superior pair with a broad yellowish band or spot near the tip of each, abbreviated before the inner margin, and of a subquadrate or nearly orbicular form.

*Obs.* On a recent journey, in company with Mr. Maclure, I had the gratification to find this handsome species in the vicinity of Easton, Pennsylvania. I have not seen it elsewhere. Only a single specimen occurred, which is a female.



## TETYRA. PLATE XLIII.

*Generic character.* Thorax very narrow before; scutel elongated, longer than broad, not covering the sides of the tergum; head immersed to the eyes in the thorax; antennæ five-jointed, second joint longer than the third; labrum very long, striated; rostrum four-jointed, the three first joints subequal; tarsi three-jointed, the first joint longer than the second.

*Obs.* The genus *Tetyra* was separated from *Cimex* of Linné, by Fabricius, to include those species of which the scutel is very much dilated and elongated, and the antennæ five-jointed. As instituted by that author, it is perfectly synonymous with *Scutellera* of Lamarck and Latreille. Leech made a different disposition of these genera. He restricted the genus *Scutellera* those to species that have the abdomen entirely covered by the scutel; and the second joint of the antennæ shorter than the third; the genus *Tetyra* he limited so as to include only those of which the scutel, though still dilated and elongated, does not entirely conceal the sides of the abdomen, and the second joint of the antennæ is longer than the third. A third closely allied genus was distinguished by Schrank, under the name of *Thyreocoris*, and adopted by Leach. Its scutel is broader than long, the second joint of the antennæ is very short, and the anterior margin of the thorax is but little narrowed.

Of all these genera, we shall be able to give examples in the course of the present work.

**TETYRA FIMBRIATA.**—*Specific character.* Dark green; thorax with a yellow spotted patch, each side behind; scutel margined with yellow.

*Desc.* Body dark-green, with large punctures: clypeus with the lateral edges parallel: anterior edge rufous, indented in the middle; antennæ and middle of the rostrum rufous: thorax with a large yellow spot each side behind, including about two dark-green spots, and a brown one; posterior angles a little prominent, obtuse: scutel, excepting at base, with a three-toothed margin: hemelytra dark-green with a yellow lateral and posterior margin, the membranous portion dark-violaceous: feet rufous; thighs with three narrow yellow bands, the anterior pair one-spined beneath; tibia with one yellow band, the anterior pair dilated to

wards the tip : venter with a transverse thick line in the middle, and an anterior longitudinal one ; lateral and posterior margins yellow, the former four-dotted each side ; beyond the middle, are two large, slightly indented, sericeous spots.

*Obs.* This singularly marked species is rare in Pennsylvania. The upper left figure of the plate.

**TETYRA CINCTIPES.**—*Specific character.* Dull, testaceous ; feet pale, with fuscous spots.

*Desc.* Body above, dull, testaceous, or brownish, with close set, rather large, profound punctures : head black, acutely crenated, and with a very obvious tubercle each side, near the base ; tip emarginated : antennæ piceous : terminal joint somewhat dilated : thorax with an obsolete glabrous line near the middle, and three tubercles on the anterior submargin, the intermediate one very obtuse, and sometimes obsolete ; anterior angles with a tubercle, and another on the lateral edge behind the middle : anterior thighs, and all the tibiæ blackish, with one or two pale bands : intermediate and posterior thighs pale, with two bands, and base blackish.

*Obs.* Inhabits the Middle States. It is one-quarter of an inch in length.

The lower right figure of the plate.

**TETYRA VIOLAURA.**—*Specific character.* Dark bluish-violaceous ; venter with a fulvous line before the middle, and a spot at tip.

*Desc.* Body dark bluish-violaceous, with large punctures : cly-



*Desc.* Body above rufous, punctured; head narrowed before, and rounded at tip; antennae rufous, basal joint yellow, terminal joint fuscous: thorax with the posterior angles obtusely rounded: scutellum with numerous, very short, transverse black lines; a transverse, slightly raised elliptical line at base, from which proceeds a slightly carinated longitudinal line, becoming obsolete on the middle: tip very slightly emarginate: hemelytra, on the coriaceous portion marked by the same minute lines as the scutellum: tergum margined with alternating black, quadrate spots; beneath yellow: feet simple, rufous: venter with two almost obsolete black lines gradually approaching each other to the penultimate segment where they terminate in a common black spot.

*Obs.* This species inhabits the Middle States, but it does not occur very frequently.

The lower left figure of the plate.

#### PHRYGANEA. PLATE XLIV.

*Generic character.* Antennae as long as the body, with numerous joints; stemmata two; mandibles none; palpi rather long: inferior wings larger than the others, longitudinally folded; feet elongated, spinous: tarsi elongated, five-jointed, terminal joint with two small nails; abdomen destitute of filaments at tip of the tail.

*Obs.* The greater number of these insects venture forth upon the wing during the evening and night, and when disturbed in their resting place in the day, they fly a short distance, and again seek a place of concealment and safety. They frequently enter our houses in the evening, attracted by the light of a candle, around which they fly. The larva lives in the water, and the parents are therefore generally in its vicinity. Some species swarm in large flocks, whilst others are solitary. They are light and active, and run with much swiftness. When the female is about to deposit her eggs, she ejects a considerable number of them, which remain attached together at the extremity of her abdomen; these she places in a favorable situation, on the stalk or leaf of a water-plant, or other object, from which the young larva may readily pass into the water. Here it soon begins to fabricate a tubular, portable dwelling, which, as respects form, may be compared to that of the clothes-moth. This domi-

oil consists of a silky matter, with various objects attached to the exterior, such as sand gravel, small pieces of wood or reed, &c., so proportioned that its weight exceeds but little that of the water. As the inhabitant increases in bulk, the tube at length becomes too small, and is necessarily abandoned. Another, of suitable dimensions is, however, soon constructed, and the little animal is again in a state of security. This artisan, is of a cylindrical, somewhat elongated form, consisting of twelve joints or segments; on the fourth joint is generally a conic tubercle on each side, and on the ultimate segments are two moveable hooks: these projections from the body, appear to be useful as points of support against the sides of the tube. The head is of firm a consistence, furnished with strong mandibles, and two eyes. The feet are six in number, and are not natatory, the anterior pair being shorter and thicker than the others, which are considerably elongated, and not dilated, nor deeply ciliated. Thus constituted, the animal crawls at the bottom of the water, with the feet and the anterior part of the body protruded from the tube, in search of food.

When about to undergo the change into the nymph state, the larva affixes its tube to some permanent object. It then proceeds to close the ends of its dwelling by a silky net, the meshes of which are so small as to prevent the ingress of depredating insects, and yet sufficiently large to admit of a free circulation of water for the purpose of respiration. The head of the nymph is provided with a kind of beak, consisting of hooks, which are used to force a passage through the net-work. At this period,

The word *Phryganea* is derived from *φυργανω* a bundle or fagot of sticks.

**PHRYGANEA SUBFASCIATA.**—*Specific character.* Pale honey-yellow; superior wings a little dusky, with two transverse blackish spots on each.

*P. subfasciata* nobis, Long's Second Expedition, vol. ii. p. 308.

*Desc.* Body honey-yellow: head a little more tinged with rufous, paler beneath; antennæ blackish; first joint yellowish on the inner and inferior irides: superior wings dull ochreous, covered with bullæ, or minute raised points, with a dusky inner and terminal margin; on each are two subequal, transverse, dusky spots, the anterior one near the middle, and connected with the inner margin; the posterior one a little undulated, placed nearer the anterior spot, than to the tip of the wing.

Variety *a.* Spots of the superior wings obsolete, or wanting.

*Obs.* Rather smaller than the preceding species, and very distinct from it. It is easily known by the two striking dusky spots on each superior wing. I obtained two or three specimens during a recent excursion with Mr. Maclure, into the interior of Pennsylvania.

The left middle figure of the plate.

**PHRYGANEA DOSSUARIA.**—*Specific character.* Wings with the nervures, and dilated transverse irregular lines, blackish.

*Desc.* Body pale yellowish-ochreous: antennæ dark-brown: stemmata brown on the inner side, white on the exterior side: superior wings yellowish-white, with blackish nervures, and transverse, somewhat dilated, connecting blackish lines, hardly forming bands; of these, one forms a quadrate spot on the costal margin, and one is common near the inner posterior angle: inferior wings with two costal spots and terminal margin; tergum dusky, segments paler towards their tips.

*Obs.* This species was sent to me, with several other interesting insects, by Mr. Charles Pickering, of Salem.

**PHRYGANEA SEMIFASCIATA.**—*Specific character.* Superior wings light ferruginous, with irregular black lines; a distinct black point near the inner basal angle; inferior wings light ferruginous.

*P. semifasciata* nobis, Western Quarterly Report. vol. ii. p. 161.

*Desc.* Body when recent, light olivaceous-green: head dark

ferruginous above: eyes dark-brown, with a moveable black pupil: mouth pale: neck light-green, with a brown, transverse, hirsute collar on the middle: thorax dark ferruginous, hairy, blackish each side: feet pale: superior wings dull ferruginous, with numerous opaque, transverse, abbreviated, black lines; a small black point at the inner basal angle, and a small transverse, abbreviated dusky line on the inner margin a little beyond the middle; inferior wings light honey-yellow, a blackish, dilated, angulated, semifasciate line near the tip, and a black, anterior spot near the inner margin: pectus pale-brownish.

*Obs.* This species frequently occurs in various parts of the United States. It is an inhabitant of Pennsylvania and New Jersey, and I also found specimens near the falls of the Ohio river; and another was sent to me by Dr. T. W. Harris, of Massachusetts. A variety in my cabinet, is altogether destitute of the semifascia on the inferior wings.

The two upper figures.

*PHRYGANEA INTERRUPTA.*—*Specific character.* Grayish; superior wings with a longitudinal black line, and a smaller one near the tip.

*Desc.* Body with grayish hair: eyes fuscous; palpi and antennæ black; superior wings gray, disk tinged with dusky, a black line extending from the base to near the middle of the terminal edge, and slightly interrupted in its middle; nearer the costal margin, and beyond the middle, is an abbreviated black line: inner margin hoary, immaculate; inferior wings dull-ochre-

men robust, convex; elytra entire, not divided at the suture, carinate each side, and embracing the sides of the abdomen; tarsi alike in the sexes.

*Obs.* This is a limited genus, consisting in the time of Fabricius, who constructed it, of only five species. As it now stands, under the reforming hand of Latreille and Dejean, it is certainly more rigidly natural. The latter author, in his "Species général des Coléoptères," describes nine species, and observes, that they are limited, in their geographical distribution, to Europe, Asiatic Russia, and North America; that although they are, strictly speaking, *Carabici*, yet they have so much the habit of the *Heteromera*, that Linné placed them in his genus *Tenebrio*.

They are of a blackish color, glossed with a handsome metallic tint, chiefly of a purplish cast. They inhabit beneath stones, and under prostrate logs.

The word *Cychrus* is derived from *Κυχρος*, the Greek name for a bird.

*CYCHRUS VIDUUS*.—*Specific character.* Black; elytra cupreous-violaceous, polished, humeral edge, and lateral margins of the thorax reflected, the latter contracted behind.

*Cychrus unicolor* Knoch neue Beyträge, p. 187, tab. 8, fig. 1.

*Nobis*, Trans. Amer. Philos. Soc. vol. ii. new series, p. 71.

*Cychrus viduus* Dejean, Spec. Gén. Coléop. vol. ii. p. 12, No. 9.

*Desc.* Head black, with a slight blue tinge: antennæ brown at tip: thorax blackish-blue, disk a little convex, and with an impressed line; lateral margins reflected; widest rather before the middle, and narrowed behind; posterior angles rounded: elytra bright coppery-violaceous, or dark purplish, with numerous striæ, in which are dilated, confluent punctures; beneath black.

*(Obs.)* Probably the largest species of the genus, and is by no means common. The specimen from which the above description, and the annexed figure were taken, was presented to me by Mr. William Hyde of Philadelphia, who obtained it near the Susquehanna river. Two other specimens have since come into my possession.

This species was first described by Knoch, under the name of *unicolor*; supposing it to be the same with that of Fabricius, and on his authority, I retained the appellation in my "Descriptions of the Carabici and Hydrocanthari;" but after the publica-

tion of that paper, being induced to examine the descriptions of Fabricius, and Olivier, I perceived at once that the *unicolor* of Knoch, was not that of those authors. Under this impression, I sent the insect to Count Dejean, under a new name, which he adopted.

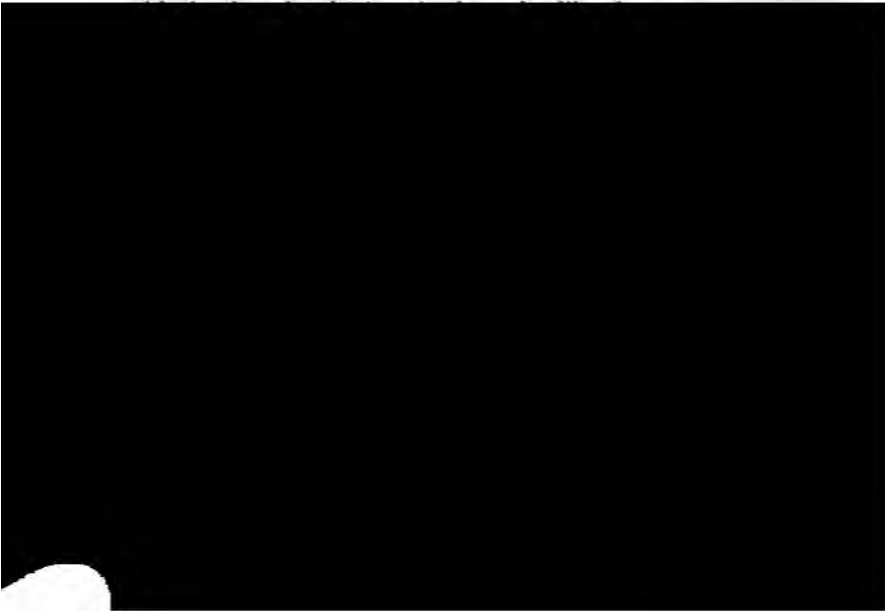
I have been thus particular in this statement, in order to record an opinion which I have always entertained, and which every observation tends to confirm. That it is of no consequence whatever, who gives a new name, either in a catalogue or letter, or attached to the insect in his cabinet, or elsewhere; but as it is the describer that incurs the responsibility, his name only ought to be quoted with that of the insect, or other object described by subsequent naturalists.

Under the operation of this principle, the present species is the *C. viduus* Dejean.

The upper figure of the plate.

#### SPHÆRODERUS. PLATE XLV.

*Generic character.* Head narrower than the thorax; external maxillary and labial palpi, with the last joint dilated, securiform, compressed; labrum elongated, profoundly emarginate; labium very large, profoundly emarginate, not wider at base than at tip; mandibles elongated, narrow, bidentate near the tip; the thorax rounded, not elevated on the sides, nor extended behind; abdomen robust, convex; elytra entire, not divided at the suture, carinate each side, embracing the sides of the abdomen; tarsi



$\Sigma\sigma\upsilon\mu\alpha$ , sphere, and  $\Delta\eta\mu\alpha$ , neck, in allusion to the form of the thorax.

**SPHÆRODERUS STENOSTOMUS.**—*Specific character.* Black; elytra dark cupreous, basal thoracic lines distinct.

*Cychnus stenostomus* Weber. Obs. Ent. p. 43, Knoch, neue Beytr. p. 190, pl. 8, f. 13. Schonh. Sys. p. 166. Nobis, Trans. Amer. Philos. Soc. (new series) vol. ii. 72.

*Sphæroderus stenostomus* Dejean, Spec. Coléopt. vol. ii. p. 15.

*Desc.* Head black, glabrous, impunctured: antennæ brownish towards their tips: thorax black, tinged with blue, rounded, widest in the middle, contracted behind; base narrower than the elytra, punctured; basal edge rectilinear; dorsal line very distinct; basal lines profoundly impressed, obtuse, punctured; elytra dark cupreous, striæ numerous, obtuse; interstitial lines narrower than the striæ, obtuse; edge dark blue; humeral edge not dilated nor reflected: epipleura punctured: pectus punctured at base: postpectus and venter each side at base, punctured.

*Obs.* This species is not uncommon in Pennsylvania. I have also received a specimen from Mr. Charles Pickering, taken in Massachusetts.

The left figure of the plate.

**SPHÆRODERUS BILOBUS.**—*Specific character.* Violaceous; beneath black; margins not reflected; basal thoracic lines obsolete.

*Cychnus bilobus* nob., Trans. Amer. Phil. Soc. (new series) vol. ii. p. 73.

*Sphæroderus bilobus* Dejean, Spec. Gén. Coléopt. vol. ii. p. 16.

*Desc.* Body beneath black: head black, with a slight violaceous tint: antennæ and palpi pale piccous: thorax cupreous-violaceous, polished, broadest rather before the middle, much narrowed behind; lateral margin not dilated nor reflected; base depressed and much punctured; basal lines obsolete; basal edge rectilinear, not wider than the pedicle of the postpectus; disk somewhat bilobated, being convex each side, and gradually indented in the middle by the dorsal line; anterior margin depressed, and rugose in the middle: elytra cupreous-violaceous, striæ numerous, punctured: pectus beneath, postpectus and abdomen each side, punctured.

*Obs.* This is somewhat smaller than the *stenostomus*, from

which it is very distinct, and is the most brilliant species we have. I have not yet met with it in the Atlantic States. The first specimen was obtained in Missouri, and I caught another in the North-Western Territory, when travelling over that region with Major Long's party.

The right figure of the plate.

#### SCAPHINOTUS. PLATE XLV.

*Generic character.* Head narrower than the thorax; external maxillary, and labial palpi, with the last joint dilated, compressed, securiform; labrum elongated, profoundly emarginate; labium very large, profoundly emarginate, not wider at base than at tip; mandibles elongated, narrow, bidentate near the tip; thorax with the lateral margins reflected, posterior angles extended; elytra entire, not divided at the suture, prominently carinate each side, and embracing the sides of the abdomen; tarsi with the three basal joints of the anterior feet a little dilated in the male.

*Obs.* Separated by Latreille, from the genus *Cychrus*, and consisting as yet, of a single species only, though Dejean supposes that the *Cychrus unicolor* of Fabricius, will constitute a second species, but the latter does not appear to be at present known to entomologists. This genus is most closely allied to *Cychrus* and *Sphæroderus*, but particularly to the former; the thorax, however, is of a different form, and the anterior tarsi of the male are a little dilated.

We have remarked in our Preface, p. vi. that "care has been





are so closely allied, that it seems hardly possible, any future discovery shall disturb their proximity.

*SCAPHINOTUS ELEVATUS*.—*Specific character*. Blackish; elytra violaceous-cupreous, polished; hardly narrower behind.

*Carabus elevatus* Fabr., Ent. Syst. i. p. 132. Oliv. Ins. vol. iii. p. 46, pl. 7, fig. 82. Oliv. Enc. Meth. (Carabe) p. 384. Linn. Syst. Nat. Gmel. p. 1967.

*Cychrus elevatus* Fabr., Syst. Eleuth. i. p. 166. Knoch, neue Beytr. p. 188, pl. 8, fig. 12. Latr. Hist. Nat. 8, p. 289. Nob. Trans. Amer. Philos. Soc. vol. ii. (new series) p. 71. Schönh. Syn. p. 166.

*Scaphinotus elevatus* Dejean, Spec. Gén. vol. ii. p. 17.

*Desc.* Head black, very slightly tinged with violet, impunctured: antennæ brownish towards the tips: thorax black, slightly tinged with violaceous, the sides gradually more reflected to the hind angles, hardly contractly behind; disk concave, with small, numerous, irregular punctures; base nearly as broad as the base of the elytra; basal angles prominent, acute: elytra violaceous-cupreous, brilliant; striæ numerous, obtuse; intervening lines narrower than the striæ, obtuse; humeral edge dilated, reflected, elevated and rounded: epipleura confluently punctured: pectus with a few punctures at base; lateral margin with minute punctures: postpectus and venter, each side at base, with large punctures.

*Obs.* This species was supposed, by all the authors, previous to Knoch, to be a native of South America, but that entomologist determined its native country, by receiving specimens from the late Dr. F. V. Melsheimer, of Hanover, Pennsylvania.

The lowest figure of the plate.

#### MELITÆ[A]. PLATE XLVI.

*Generic character*. Antennæ with a short, somewhat broad, compressed terminal club; palpi divaricating, hairy, second joint compressed, terminal joint acicular, half the length of the preceding joint; inferior wings suborbicular, somewhat checkered beneath; anterior feet short, feeble; tarsi with double nails.

*Obs.* The distinction between this genus and *Argynnis*, is very slight, too much so, we think, to justify the continuation of it, except perhaps as a subgenus. We have set down the characters


pretty much as we find them in the authors, and, although it is obvious, that they do not agree very well with the species we have placed under it, yet there cannot be the slightest doubt of the correctness of the reference. Perhaps the only striking character by which the species may be separated from those of the above mentioned genus, is that of the somewhat checkered appearance of the inferior page of the posterior wings. A more remarkable distinction may be observed in the larvæ, which are not armed with spines as in *Argynnis*, but are pubescent, with small fleshy tubercles on the body; the pupa is suspended by the tail.

The genus under the present name, was separated from the Linnæan *Papilio* by Fabricius.

*MELITÆ MYRINA*.—*Specific character*. Wings slightly indented, fulvous, with black spots and undulated lines; beneath with more than thirty silvery spots, and an ocellate spot near the base of the inferior ones.

*Papilio myrina* Cromer, ii. p. 141, pl. 189, fig. B. C. Fabr. Ent. Emend. p. 145. Herbst, Natursyst. ix. p. 178, pl. 255, fig. 3, 4.

*Desc.* Wings fulvous, slightly indented on the exterior edges; superior wings with black, transverse, undulated, and interrupted lines, occupying the basal portion to a considerable distance beyond the middle, the first sublunate, the second double; towards the tip, a transverse series of black dots, then of black angles, confluent with the black nodose edging; inferior surface



*Obs.* This pretty little species is common in various parts of the United States, extending as far south as Florida, and north at least to Massachusetts, from whence Dr. T. W. Harris sent me a specimen. It resembles several foreign species, and particularly the *A. Selene*, for which it may be easily mistaken, but on comparison, that species will be found to have the third series of silvery spots widely interrupted in the middle, and the small ocellate spot near the base is not silvery, but black, with a pale pupil; still, however, they are so very closely allied, that in considering them as distinct species, I rely on the authors whose synonyms are quoted above.

The plant is the *Claytonia virginica*.

#### PLOIARIA. PLATE XLVII.

*Generic character.* Body elongated, filiform; feet ambulatory, very long, with distinct nails; anterior pair shortest, raptatory, with elongated coxæ; eyes moderate; labrum very short; antennæ elongated, setaceous, four-jointed; beak inflected.

*Obs.* Such is the particular form and appearance of the antennæ in insects of this genus, that on a slight inspection, a person would almost be disposed to pronounce them ambulatory, and that there are therefore eight feet. But no true insect yet known, has more or less than six feet. As respects the remarkably long and slender form of some of the species, they have considerable affinity for the genus *Spectrum*, and the anterior pair of feet may be compared to those of *Mantis* and *Empusa*, with equal aptitude. These feet are much shorter than the others, are used almost altogether for the purpose of seizing and conveying the prey to their mouth; whilst the two posterior pairs support the body, and move it from place to place. Their movements are rather slow and unsteady, moving up and down upon their legs as they proceed forwards, in the manner of the Crane-fly. (*Tipula*). They feed on small insects. Scopoli first established this genus; the species were referred to *Cimex*, by Linné and others, and Fabricius, unacquainted with what Scopoli had done, perceived the necessity of forming a genus for them, and this he called *Empsa*, of which he describes four species; three belonging to America, and one to the East Indies. *Cimex vagabundus*

Linn., of Europe, is a fifth species, which, however, Fabricius placed in his genus *Gerris*.

The word *Ploiaria*, is of uncertain origin; Mr. Dumeril supposes it to have been derived from the Greek name for a small vessel, Πλοίαρον. (*navicula*).

**PLOIARIA BREVIPENNIS.**—*Specific character.* Fuscous-rufous, glabrous; wings abbreviated; feet near the knees annulated.

*Desc.* Body fuscous, more or less tinged with sanguineous: antennæ very slender, with a white annulus at the tip of the first joint: anterior tibiæ with the spines black at tip: nervures of the wings brownish: intermediate and posterior feet with the thighs near the tip, and tibiæ near the base biannulate with whitish: tergum beneath the wings bright sanguineous.

*Obs.* This is a very common insect, and is often found even in the city of Philadelphia. It inhabits out-houses, where it may be observed generally motionless on the walls. When disturbed, it moves its body up and down on its legs, and at the same time advances slowly forwards.

The line denotes the natural size.

#### MALACHIUS. PLATE XLVIII.

*Generic character.* Body furnished with oocordes: head retracted to the eyes within the thorax: antennæ ten-jointed, filiform, serrated; mandibles emarginate: labium entire; palpi filiform; tarsi simple, nails with a tooth beneath; elytra flexible.

*Obs.* Linnæus referred these insects to his genus *Cantharis*;

retracted, so that no remnant of them remains in view. The cocardes are three-lobed bodies, of a vivid red color, and vesicular consistence, situated one on each side near the anterior angles of the thorax, and another on each side of the base of the abdomen. Their uses are altogether unknown, but we cannot suppose them to be of primary importance, since one, and indeed all of them have been cut off without diminishing the agility of the insect, or subjecting it to any apparent inconvenience. Like the retractile cervical appendage of the larvæ of *Papiliones*, it may possibly serve to repel their enemies. Olivier supposes that the larvæ of the *Malachius* live in wood. Latreille informs us that in some of the species one sex has an appendice at the tip of each elytrum, in the shape of a hook, which is seized by the mandibles of the opposite sex in order to arrest the fugitive.

**MALACHIUS BIPUNCTATUS.**—*Specific character.* Thorax rufous, with two remote black spots; elytra blue; abdomen sanguineous.

*M. bipunctatus nobis*, Journ. Acad. Nat. Sci. vol. iii. p. 185.

*Desc.* Head black, with a slight greenish tinge; all before a line drawn between the anterior canthi of the eyes, including the antennæ, yellow; mandibles and terminal joints of the palpi black; thorax yellowish-rufous, with two small remote, rounded black dots; posterior submargin somewhat indented: elytra blue or greenish: pectus rufous: postpectus and feet black: abdomen sanguineous.

*Obs.* This fine species is an inhabitant of the Arkansaw region near the Rocky Mountains, where I captured two specimens. In magnitude it exceeds any other North American species yet known. The second joint of the antennæ in the male is dilated and irregular.

The lowest figure of the plate.

[Belongs to the genus *Collops* Fr.—LEC.]

**MALACHIUS TRICOLOR.**—*Specific character.* Head, postpectus, and feet black; labrum and thorax rufous; abdomen rufo-testaceous.

*M. tricolor nobis*, Jour. Acad. Nat. Sci. vol. iii. p. 182.

*Desc.* Head black; labrum, clypeus on its anterior margin and palpi at base, pale rufous: antennæ pale rufous, dusky at tip: thorax transverse, nearly oval, rather short, rufous, immaculate:

elytra dark bluish-green, or somewhat violaceous; middle of the lateral edge obsolete piceous: postpectus and feet deep black: venter testaceous.

Variety, *a*. Elytra blue; venter and thorax sanguineous.

*Obs.* This species was taken on the Mississippi, and specimens also occurred near the Rocky Mountains. It is as large as *M. 4-maculatus* Fabr., and larger than *M. thoracicus* Fabr., which it much resembles. The variety was sent me from Massachusetts by Mr. Charles Pickering.

The right figure of the plate.

[Also a *Collops*.—LEC.]

*MALACHIUS NIGRICEPS*.—*Specific character.* Thorax rufous, with a large black spot: elytra blue: venter sanguineous.

*M. nigriceps* nobis, Jour. Acad. Nat. Sci. vol. iii. p. 183.

*Desc.* Head deep black, pale testaceous or rufous before: thorax rufous, with a large black spot, sometimes composed of two dilated, confluent ones, and not attaining the anterior margin: elytra violaceous, blue, or greenish; pectus rufous, at the origin of the feet black: postpectus black: feet black: thighs sometimes rufous, particularly the anterior ones: venter sanguineous.

Variety, *a*. Thorax entirely black.

*Obs.* Distinguishable from the *tricolor* by the black spot of the thorax, and by the proportion of this part, which is comparatively longer than in that insect. Its antennæ present the remarkable character of the dilatation and irregularity of the second joint of the antennæ.

latter edged with testaceous : feet black : anterior pairs of tibiae often piceous.

*Obs.* This species is somewhat smaller than *M. quadrimaculatus*. It is closely allied to *M. tricolor*. The second joint of the antennæ of the male is dilated and irregular. Mr. Thomas Nuttall first obtained specimens of the *vittatus* in the Mississippi region, where I have since met with it.

The upper figure of the plate.

*MALACHIUS OTIOSUS*.—*Specific character.* Thorax rufous, with a dilated longitudinal line ; antennæ and elytra black.

*Malachius nigripennis* nobis, Journ. Acad. Nat. Sciences, vol. iii. p. 184.

*Desc.* Body black, inconspicuously hairy : head with three obtuse indentations between the eyes ; antennæ black ; labrum and clypeus before, rufous : thorax rufous, with a much dilated black line from the anterior to the posterior edge : elytra black, with a very slight violaceous tinge : pectus pale rufous, or testaceous ; origin of the feet black : postpectus black : venter black, segments with more or less dilated, sanguineous margins ; sometimes entirely sanguineous : feet black ; anterior thighs sometimes pale.

This species is readily separable from *M. nigriceps* by its inferior size and blackish elytra and antennæ, and by the circumstance that the black line of the thorax is continued to the anterior edge.

Count Dejean informs me the name *nigripennis* is preoccupied in this genus ; I have therefore been compelled to change it.

The lower middle figure.

[Belongs to *Anthocomus* Er.—LEC.]

#### PHILANTHUS. PLATE XLIX.

*Generic character.* Labrum concealed ; eyes not extending to the posterior part of the head, very slightly emarginate ; stemmata three ; antennæ thicker towards the tip, inserted in the middle of the face ; nasus trilobate ; mandibles simple ; radial cell one, elongated, acute at tip ; eubital cells three, the first large, the second small, sessile, receiving the first recurrent nerve, the third subquadrate, elongated at its exterior inferior

angle and receiving the second recurrent nervure, an imperfect fourth cellule sometimes exists ; feet rather short.

*Obs.* In the present order of insects called Hymenoptera by Linné, are many species whose manners are highly interesting: living together harmoniously in large communities, and laboring for the attainment of a common object, such species exhibit such eminent proofs of intelligence, as to stagger the vain theorist in the midst of his speculations, and to render insecure the distinction which he has endeavored to establish between the blindness of instinct and the splendid nature of reason.

But the far greater portion associate by pairs, in their perfect state, for the important purpose of continuing their race, and of these are the species of the genus under consideration. It has been long known that the *Philanthi* are parasitic; the female digs a hole in the earth for the reception of her egg, with which she places the body of an insect that she had killed for the nurture of her young; she then completes her task by covering the hole with earth. Latreille gives the following interesting account of the *P. apivorus* of Europe. It is a dangerous enemy of the domestic bee. The female digs a horizontal gallery about a foot in depth in a sloping bank of light earth exposed to the influence of the sun; she separates the earth, and carries it to the surface by means of her mandibles and feet. When the nest is thus completed, the parent visits the neighboring flowers for the purpose of obtaining a honey bee; she seizes her victim, and kills it by piercing it with her sting at the junction of the head with the thorax, or of the thorax with the abdomen, and transports it



resemble those of the bee. The covering of the pupa is a thin pellicle.

Fabricius first applied the name *Philanthus*; but Latreille divided the group which his predecessor established under that name into two genera, retaining the appellation for the present group, and applying that of *Cerceres* to such as have denticulated mandibles, and the second cubital cellule petiolated. The former were called *Simblephilus*, and the latter *Philanthus*, by Jurine.

The name of this genus is compounded of the Greek words φιλέω, I love, and ἄθος, a flower.

**PHILANTHUS CANALICULATUS.**—*Specific character.* Pale yellow; vertex, disk of the thorax, and incisures of the tergum reddish-brown.

*P. canaliculatus nobis*, Western Quarterly Report. vol. ii. p. 79.

*Desc.* Body pale yellow; vertex reddish-brown; front with two longitudinal reddish-brown lines passing through the base of the antennæ; antennæ rufous, black at tip: mandibles black at tip: superior wings with a longitudinal brownish line on the middle from near the base to the tip; radial cellule rounded at tip, and at its inferior angle descending to meet the superior angle of the second cubital cellule, which is triangular: tergum with a transverse groove on the middle of each segment, and a marginal smaller one; incisures reddish-brown.

*Obs.* When traversing the Arkansaw region with Major Long's party, I obtained a single specimen of this insect, which is a male; it is so very similar in general appearance and color to *Cerceris bilentata* nob., that but for its generic differences, I should almost have been led to consider it as a mere sexual variety of that species. But it cannot be placed in the genus *Cerceris*, as the mandibles are entirely unarmed within, and the second cubital cellule is not petiolated, and the eyes are not emarginated.

The upper right figure of the plate.

**PHILANTHUS ZONATUS.**—*Specific character.* Black: front, two lines on the thorax and posterior submargins of the segments of the tergum, yellow: feet rufous.

*P. zonatus nobis*, Western Quarterly Reporter, vol. ii. p. 79.

*Desc.* Body above black: front yellow, with two black lines descending from the black vertex to the origin of the antennæ:

antennæ and mandibles rufous, black at tip; base of the head rufous: thorax, first segment and scutel, each with a yellow line: a large rufous spot each side behind the scutel: superior wings with a dusky margin towards the tip: costal nervure dull rufous in the middle; radial cellule rounded at tip, and at its inferior edge descending in an angle to meet the superior angle of the second cubital cellule, which is triangular: tergum with an obsolete transverse groove on the middle of each segment, and a marginal slender one: posterior submargins yellow: feet rufous; pectus black: venter dull rufous.

*Obs.* The specimen which served for this description is a male, which was taken in the same country as the preceding. It corresponds with the *canaliculatus* in the simple form of its eyes and mandibles, and in the shape of the radial and second cubital cellules. These characters justify the separation of the two species from the foregoing, into a distinct subgenus.

The lower left figure of the plate.

PHILANTHUS VERTILABRIS.—*Specific character.* Black: thorax with a line on the interior and posterior margins, and tergum, with four or five bands of which the anterior one is broadest, yellow.

*P. vertilabris* Fabr. Syst. Piez. p. 303. Coqueb. Ill. Icon. p. 96, pl. 22, fig. 2.

*Desc.* Head black; beneath the antennæ yellow; antennæ beneath yellow: thorax with confluent punctures black; a transverse line before and another behind yellow: wings tinged with

**PHILANTHUS POLITUS.**—*Specific character.* Black, polished; first segment of the tergum with two whitish spots, the other segments with a spot each side, connected by a whitish band.

*P. politus nobis*, Long's Second Expedition, p. 343.

*Desc.* Hypostoma, mandibles at base and anterior line of the orbits as high as the emargination, whitish; antennæ beyond the third joint on the inferior side rufous brown, a whitish spot on the basal joint: thorax with small, irregular punctures; collar with two transverse spots; wing-scale, and transverse line on the scutal, whitish: wings a little dusky towards the tip: pleura with a double whitish spot beneath the superior wings: thighs black; knees and tibiæ, excepting a black line on the inner side, whitish; tarsi dusky: tergum polished; first segment with a transverse ovate spot each side; remaining segments each with a transverse quadrate spot each side, touching the posterior margin, and connected along this margin by a slender, undulated band.

*Obs.* An inhabitant of Pennsylvania. It may be readily known from the preceding, by its polished appearance.

The lower right figure of the plate.

#### HIPPARCHIA. PLATE L.

For Generic Characters, see *Hipparchia andromacha*. [ante p. 80.]

**HIPPARCHIA SEMIDEA.**—*Specific character.* Wings brown; inferior pair marbled beneath.

*Desc.* Body black, immaculate: antennæ fuscous, beneath bright rufous towards the tip, the club very gradually formed: superior wings brown, the costal margin with alternate transverse black and yellow lines, exterior margin with alternate black and white spots; beneath dull ochreous, with obsolete, transverse, abbreviated, blackish lines; costal and broad tip margin alternated with vivid black and white lines; inferior wings dark brown; towards the posterior margin obscure ochreous, with obsolete, abbreviated, blackish, transverse lines; posterior margin with a slender black line and dirty white edging; beneath marbled with black and white, the black prevailing across the middle and base of the wing.

*Obs.* Many of the insects belonging to this genus are decorated with beautiful colors, and with eye-like spots upon the wings;


but the present species is of a more simple and unassuming character. Without any imposing attractions to arrest the eye, it exhibits an agreeable neatness in the disposition of the contrasting colors, on the inferior surface of the wings. But its chief title to our attention is the great altitude of its native climate. It inhabits the bald summits of the White Mountains of New Hampshire, and appears to be limited to that inhospitable region. Mr. T. Nuttall sent me a specimen some time since, taken by himself; and Mr. Charles Pickering of Salem, has recently presented me with an individual in an excellent state of preservation, from which the accompanying plate has been taken.

The plate exhibits two views of the insect.

#### BOLETOPHAGUS. PLATE LI.

*Generic character.* Body very rough, oval, convex; head rather large, without a neck; eyes almost bisected by the prominent margin; antennæ arcuated, inserted beneath the margin, thicker towards the tip; mandibles destitute of a horny nail; palpi filiform, terminal joint of the maxillaries cylindrical: thorax transverse, as broad as the elytra, the anterior angles projected forwards: scutel small, rounded: elytra covering the tergum.

*Obs.* In consequence of the rough unequal character of the surface of these insects, their appearance is repulsive to the common observer, but in the estimation of an entomologist, their claims to his attention are in no respect diminished by any supposed departure from a particular standard of beauty. They



*Opatrum bifurcum* Fabr., Supp. p. 40.

*Opatrum cornutum* Panz. Faun. Amer. Bor. Prodr. pl. 1, fig. 5, a b, and fig. 6, a b.

*Boletophagus cornutus* Fabr. Syst. Eleuth. vol. p. 112. Schönh. Syn. vol. i. p. 120.

*Eledona cornuta* Latr. Hist. Nat. Crust. et Ins. vol. x. p. 312.

*Desc.* Body brown: head with a few small tubercles; and on the anterior edge an elevated, double acute horn: thorax irregularly granulated, with two prominent, porrect, incurved horns, slightly dilated at tip, hairy beneath, and rather longer than the head; lateral edge denticulated: elytra with elevated, abbreviated lines and tubercles; at tip somewhat abruptly deflected.

*Female*, destitute of the elevated double horn on the anterior edge of the clypeus: thorax with two elevated tubercles, vertical and truncated.

*Obs.* This species frequently occurs in various parts of the United States, in fungi. It is very distinct from any other known insect of the genus. The thoracic processes, as well as that of the head, afford very good and striking characters. We have never been so successful as to obtain the above quoted work of Panzer, and we therefore refer to it through other authors.

The two upper figures of the plate represent the male in different positions.

The lower right figures exhibit the female. The lines show the natural length.

**BOLETOPHAGUS CORTICOLA.**—*Specific character.* Head and thorax unarmed; elytra with elevated, abbreviated lines and tubercles.

*Desc.* Body brown: head slightly granulated; anterior edge a little reflected, and very slightly emarginate at tip: thorax granulated, and somewhat canaliculate; lateral edge denticulated; posterior angle an obtuse spire [spine]: elytra with regular series of elevated, interrupted lines, and alternating with series of elevated tubercles.

*Obs.* For this species I am indebted to Dr. John F. Melsheimer, who sent me several specimens under the name which I have adopted. He informs me that it was caught in Virginia, in October, under the bark of the pine.

The lower left figures of the plate represent the species in two positions. The line shows the natural length.

### SPHYRACEPHALA. PLATE LII.

*Essential character.* Head extended each side in a process which is oculiferous at tip; antennæ inserted on the front, third joint rounded, compressed, setigerous at tip.

*Natural character.*—Head subtriangular; eyes pedunculated, peduncles very short, robust; stemmata approximate; antennæ distant, robust, short, nearly parallel to the peduncles, three-jointed; first joint very short, almost concealed; second joint obconic, ciliated at tip; third joint orbicular, setigerous at tip; proboscis bilabiated; palpi elevated, conic; metathorax with a conic spine each side beneath the wings; scutel two-spined; poisers naked; wings incumbent; feet moderate; anterior thighs dilated; anterior tibiæ a little arcuated.

*Obs.* Two genera of dipterous insects have already been constituted, in which the eyes are pedunculated, or situated at the extremity of elongated, immovable processes of the head: these are *Diopsis* of Linneus, and *Achias* of Fabricius. The present genus differs from the former, however, in not having the antennæ situated on the peduncles of the eyes, but on the front, as in *Achias*. It agrees with the former in the terminal origin of the setæ of the antennæ, and in the rotundity of the third joint of those organs, as well as in the armature of the scutel and lateral part of the trunk. In the little known genus *Achias*, we are

dark; peduncles of the eyes not longer than the distance between their bases, a distinct seta on the superior part of the peduncle near the tip, and another each side of the vertex above the antennæ, rather larger than the seta of the antennæ: stemmata situated on a very slight elevation: trunk with the lateral spines conic, blackish: scutel, spines cylindric, setigerous at tip: wings hyaline, a band behind the middle, and a semiband before the middle, brown; poisers white: abdomen black, immaculate: feet yellowish; anterior thighs very thick rufous, blackish above and beneath.

*Obs.* This insect is very rare in Pennsylvania; a few years since, I obtained a single individual in the month of May: it had alighted on a leaf of the skunk cabbage, near the Wissahickon creek, a few miles from this city. During my subsequent excursions in pursuit of insects, I had never the good fortune to meet with another specimen, until the autumn of 1819, when with Major Long's party on the Missouri, near the cantonment of the party, on the river shore was a considerable body of rock, on which I was frequently occupied in hunting for organic reliquæ; here, amongst other interesting objects, I had the satisfaction to find the present insect in considerable numbers, lodged, for protection against the high winds and cool temperature, in small crevices of the rock.

The plate exhibits two views. The line shows the natural length; and a wing is figured below.

#### CLYTUS. PLATE LIII.

*Generic character.* Body elongated, subcylindric; head inclined; antennæ shorter than the body, inserted in an emargination of the eyes, eleven-jointed; labrum apparent; labial palpi with the last joint obtrigonal; thorax globose, unarmed; hind thighs clavate

*Obs.* A genus somewhat numerous in species, belonging to the natural family *Cerambycidae* Leach. The species were scattered in the genera *Cerambyx*, *Cullidium*, *Leptura*, until Fabricius perceived the necessity of a separation, and he embodied them under the present designation. Many of them are very prettily ornamented with bright yellow bands and spots. In the larva state they live in wood, penetrating freely through the hardest trees, and proving very injurious to the particular kinds of timber which they attack.

**CLYTUS SPECIOSUS.**—*Specific character.* Black; thorax dilated; elytra about five-banded; feet yellow.

*C. speciosus nobis*, Long's Second Expedition, vol. ii. p. 290.

Body deep black; head with a band passing from the vertex round behind the eyes, and meeting a band which is round the mouth above, yellow; a yellow band on the front, immediately above the antennæ, terminating in the sinus of the eyes; mandibles yellow; nasus and labrum pale yellowish, glabrous; antennæ all black: thorax subglobular, depressed; an oblique spot each side before, and another oblique, longer spot or abbreviated line each side of the middle, yellow; an arcuated, impressed line each side of the middle; scutel yellow; two small yellow spots before the scutel under the thorax: elytra with yellow bands; the first band forms a regular arch, of which the scutel represents the key-stone; the second band is in the form of the letter W, each V receiving a termination of the first band; the third band is nearly transverse, placed upon the middle; fourth band arcuated each side from the suture obliquely backward, parallel and near to a large terminal spot or band, which on each elytrum is ovate, with a central black spot; tip with a short obtuse tooth: humerus with three small spots: postpectus spotted with yellow: thighs with a brown line on the inner side: venter yellow.

*Obs.* During a short repose of Major Long's party on the bank of the Wisconsin river, preparatory to crossing that stream, this unusually fine insect attracted the eye of that officer, as it rested on the bark of a hickory tree. Another specimen belongs to the



slightly hairy at base; each with an oval, oblique spot near the basal middle; then a subsutural line proceeding from near the basal spots to the sutural middle, thence it curves over the disk, and terminates in a small spot rather before the middle on the exterior margin; an oblique line behind the middle passes from the suture outward; all these bands and spots are yellow; disk near the tip obsoletely obscure fuscous; the tip rounded, unarmed; beneath spotted and banded with yellow: feet rufous: thighs at tip dilated, compressed, black.

*Obs.* Has some resemblance to *C. arctis* Fabr., of Europe, but besides other points of distinction, the elytra are not remarkably truncated as those of that species are. It seems also to be allied to *C. arvicola* and *auricola* Oliv., and particularly to the latter, from which, however, it may be distinguished by its larger size, by having the thorax nearly surrounded by a yellow line, and by the obliquity of the terminal band of the elytra. I obtained it near the Illinois river.

The lower figure of the plate.

[*Callidium ruricola* Oliv. Ins. 70, tab. 8, fig. 96.—LEC.]

*CLYTUS UNDULATUS*.—*Specific character.* Brown; thorax sub-bifasciate; elytra with a spot and three bands, yellow.

*C. undulatus nobis*, Long's Second Expedition, vol. ii. p. 291.

*Desc.* Body dark brown: head darker than the elytra; antennæ dark ferruginous; front, below the antennæ, bilineate with pale yellow: thorax darker than the elytra, rough with minute spines and hairs; anterior and inferior margins yellow, interrupted above; basal margin with a transverse yellow spot each side: elytra with a transverse spot on each near the base; an undulated narrow band across the middle, rising along the suture nearly to the scutel; an undulated transverse band behind the middle, and a terminal band; postpectus with the incisures margined with yellow: venter, having the segments margined with yellow.

*Obs.* I caught the two sexes of this species in the North West Territory, when traversing that part of the Union with Major Long's party. It seems to have some resemblance to the *C. mucronatus* Fabricius, of South America; but the elytra are not mucronate, and the markings of the superior surface of the body are different.

The right figure of the plate.

*CLYTUS CAPREA*.—*Specific character*. Fuscous; thorax with the anterior edge yellow; elytra with four bands at tip, yellow.

*C. caprea nobis*, Jour. Acad. Nat. Sci. vol. iii. p. 424.

*Desc.* Body blackish, hairy; head immaculate; antennæ short, dull rufous; thorax very hairy; a longitudinal series of transverse, abbreviated, elevated lines, of which the anterior one is much more elevated: a yellow line on the anterior edge, interrupted on the side: scutellum small, black: elytra dark brown, blackish towards the base; four bands and tip yellow: the first and second bands on each elytrum are united in the form of a circle, only interrupted by the prominent humerus; third band central, and representing a common M; fourth band drawn obliquely backward from the suture; tip emarginate, a prominent spine at the exterior angle: abdomen and posterior portion of the postpectus fasciate with bright yellow sericeous hair: feet hairy, rufous or blackish; posterior pair elongated; thighs dilated mucronate at tip.

*Obs.* A handsome species, easily distinguished from others by the rugous thoracic line, combined with the O O at the base of the elytra. It inhabits this State, and Mr T. Nuttall presented me with many specimens which he found in Arkansas. The bands of the elytra are sometimes white.

The left figure of the plate.

[This was subsequently described as *C. elevatus* and *C. gibbicollis* Lap and Gory.—LEC.]

DANAUS. PLATE LIV.



*Papilio plexippus* Cram. vol. iii. p. 24, pl. 206, figs. E and F.  
Herbst. Natur. vol. vii. p. 19, pl. 156, figs. 1, 2.

Catesby, Carolina, vol. ii. pl. 88.

*Linus feruginea plexippe* Hubner.

*Papilio archippus* Smith, Ins. of Georgia, vol. i. pl. 6.

*Desc.* Superior wings above fulvous, anterior margin black, with white dots; exterior margin black, with a double series of white dots; the black at the tip is very broad, and contains a dilated, interrupted, and abbreviated fulvous band, and several pale fulvous spots; posterior margin black, immaculate; beneath as above, but the spots are of a purer white; inferior wings entire, sometimes a little crenate, fulvous, with a black posterior, and half of the exterior margins black, the former with a double row of white spots, of which those of the middle are sometimes nearly obsolete, outer margin with a single series of three or four white spots; nervures of the disk margined with fuscous, with an elevated spot behind the middle, on the third nervure from the inner margin; beneath ochreous, in other respects resembling the superior surface, but the spots are of a purer white and larger, the nervures are more dilated, black, edged more or less deeply with white; body black, with numerous white dots on the trunk, and a few on the head and neck above; feet blued black.

*Obs.* The black margin of the superior surface of the wings has an opalescent gloss in a particular light. The larva is annulate with black and white, with two slender processes on the anterior part of the body, and two on the posterior part. The pupa is of a delicate green color, with dots of burnished gold. It feeds on different species of *Asclepias*, and is very abundant in the neighborhood of Philadelphia, on the *A. syriaca*, and according to Abbott in South Carolina, on the *A. curassavica*. I consider the present as the *plexippus*, on the authority of Gmelin, who in his edition of the *Systemata Naturæ*, states its native country to be North America. I have of course omitted many synonyms and references which that author has inserted, as I consider them to be doubtful. Catesby's figure cannot be mistaken; he states that the species is "common in most of the northern colonies in America."

The plate represents two views of the insect.



EXPLANATION  
OF  
TERMS USED IN ENTOMOLOGY.

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A.

- Abbreviated*, shortened, not extending to the extremity of a given part; (*elytra*) shorter than the abdomen.
- Abdomen*, the posterior portion of the body, divided into *segments* or rings, by sutures or *incisures*; including the viscera, genitals, &c., and composed of *tergum*, *venter*, *stigmata*, and *anus*.
- Abrupt*, terminating suddenly, not drawn out to a point.
- Acetabuliform*, like a circular shallow saucer, the sides of which are more or less incurved. See *calathiiform*.
- Acetabulum*, that segment of the *postpectus* that is situated behind the *peristaethium*; it is bounded each side by the *parapleuræ*, and behind by the *macriæ*; it contains cavities before for the insertion of the intermediate feet.
- Acicular*, needle-shaped; approaching *subulate*, but more slender, with a more delicate and pungent point; closely allied to *acerosæ*.
- Acinaciform*, cimitar-shaped; sabre-shaped; one thick and straight edge, the other thin and curved.
- Acini*, granulations.
- Aculeate*, prickly; furnished with, or ending in, prickles; armed with small sharp points.
- Aculeate-serrate*, armed with numerous short spines or prickles inclining towards one end.
- Aculei*, prickles; small sharp points.
- Aculeus*, the instrument and appendages with which the female lays her eggs; the *oviduct* or sting; an elongated dart, often poisonous, seated in the extremity of the *abdomen*; it is compound, having two or more darts; exerted, projecting; recondite, concealed; retractile, capable of being withdrawn; simple, having but one point; or vaginate; inclosed in a bivalve sheath; it is composed of *valvæ*, *vagina*, and *spicula*.

*Acuminated*, tapering to a point; a point lengthened out.

*Acute*, sharp pointed.

*Adnate*, connected; adhering or growing together; adjoining; (abdomen) attached to the thorax without the intervention of a *petiole*.

*Adpressed*, contiguous; pressed to, or laid to.

*Æquata*, equal.

*Æroscepsin*, a supposed unknown sense, of which the antennæ are, by some, believed to be the organs.

*Æruginous*, the color of verdegriis; light bluish-green.

*Alæ*, wings.

*Alated*, winged; furnished with wings, or with projecting bodies somewhat like wings.

*Albidus*, a dusky white.

*Albus*, white.

*Alternate*, so placed that between two on one side, there is but one on the opposite side; or a series of spots on the chequer-board would be said to be alternately black, or alternately white. See *opposite*.

*Alveolate*, furnished with cells.

*Alveole*, a cell like that of a honeycomb.

*Ambulatory*, formed for walking. See *saltatory*, *cursor*.

*Anal angle*, the inner posterior angle of the inferior wings of the Lepidoptera.

*Anastomosing*, inosculating, or running into each other like veins.

**Annulus**, a ring; the circumference of the *gula* in which the *loræ* terminates; a term applied to colored rings upon the body or members, differing from a *band*, by being continued quite round.

**Antennæ**, two articulated organs of sensation, situated on the head; in the Hymenoptera particularly, they are divided into *radicula*, *scapus*, *pedicellus*, and *apex*; they are *moniliform*, *setaceous*, *clavate*, &c.

**Anterior angle**, of the thorax, is the lateral angle near the head on each side.

**Anterior margin**, the margin on the anterior side of the wings, extending from the *base* to the *apex*; the *costal margin*; opposite to the *posterior margin*.

**Anterior palpi**, the *labial palpi*.

**Anterior wings**, the *superior wings*.

**Antipenultimate**, the last but two.

**Asus**, the apex of the *abdomen*, in which the organs of generation in most insects are attached or concealed; including *fimbria*, *aculeus*, and *penis*.

**Apex**, in general indicates the terminal portion of any organ or part of the body; (of the wing) it is that part or angle which is opposed to, or at the greatest distance from, the *base*; (*ligula*) the portion which is not included in the *tubus*; (*maxillæ*) that portion which is above the *palpus*.

**Apiculate**, covered with fleshy, erect, short points. See *verrucoe*.

**Apodal**, (*larvæ*) with simple tubercles instead of feet. See *geometræ*.

**Apophysis**, the *coxæ*; the two small basal joints of the feet. See *trochanter* and *flocculus*.

**Approaching**, *converging*.

**Approximate**, near to, near together; (*antennæ*) close together at base.

**Aptera**, insects without wings; many of the Coleoptera are destitute of wings, and in most of such species the *elytra* are inseparable: the females of several species of the Lepidoptera are also destitute of wings; as are also some of the Hymenoptera.

**Arachnoidrous**, cobweb-like; resembling a cobweb.

*Arcuated, or arquated, bowed.*

*Area, or Areolæ, wing cells; the membranaceous spaces between the nervures; the cellules.*

*Aristate, or setarious, (antennæ) furnished with a hair, which arises from the superior, lateral, or terminal portion of the terminal joint, as in the common house-fly. See clavate, lamellate.*

*Articulate, divided into distinct joints.*

*Articulation, joint; this word is generally used to denote the space between two joints; articulations are *apparent*, when their distinction is obvious, and *obsolete*, when their separation are not, or hardly visible. The Coleoptera have generally eleven articulations to each antenna, the Hemiptera four to six, the Hymenoptera commonly thirteen in the males and twelve in the females.*

*Artus, the members; the instruments of motion, wings, feet, &c.*

*Asperous, rugged; with very distinct elevated dots, more uneven than *scabrous*.*

*Assurgent, rising; declining at the base, and rising in a curved manner to an erect posture.*

*Ater, the deepest black.*

*Atomus, a minute dot or point.*

*Atropurpureus, dark purplish, almost black.*

*Atrovirens, dark green, approaching blackish.*

*Attenuated, growing slender; tapering.*

*Aurantiacus, orange color; a mixture of yellow and red. See*



*Axillary*, placed in the crotch or angle of the origin of two bodies; arising from the angles of ramification.

*Azure*, azure-blue; nearly the same as *cæruleus*, but more like ultramarine.

## B.

*Badius*, chestnut or liver brown.

*Barb*, a kind of spine armed with teeth pointing backwards.

*Barbated*, or *bearded*, (antennæ) having tufts or fascioles of hair at the articulations; (abdomen) tufted with hair at the sides or tip.

*Basal*, or *basilar*, relating to the base.

*Base*, (of the wing or elytra) that part which is attached to the thorax: (of the thorax) that part which is nearest to the elytra; (of the abdomen) the part nearest to the *metathorax*; (of the tongue) the portion included in the *tubus*; (of the maxillæ) the part below the *palpus*, including *cardo* and *pecten*.

*Bearded*, *barbated*.

*Bicaudate*, having two tails or processes; this term is generally applied to the posterior wings of Lepidoptera when thus formed.

*Bicornute*, two-horned.

*Bicuspidate*, ending in two points.

*Bifarious*, pointing in opposite directions.

*Bifid*, cleft; cloven in two. See *emarginate*, *furcate*, *biparted*.

*Bijugum*, in two pairs.

*Bilamellar*, divided into two laminæ.

*Bilobate*, divided into two lobes.

*Bibocular*, having two cells or compartments.

*Binate*, in pairs: consisting of a single pair.

*Biparted*, profoundly divided into two parts. See *bifid*.

*Bipupillate*, an ocellate spot, having two pupils or dots within it, of a different color.

*Biradiate*, consisting of two rays.

*Biaetous*, furnished with two setaceous appendages.

*Bivalve*, (proboscis) consisting of two valves or divisions united, so as to form a tube.

*Blind*, or *subcellate*, applied to an eye-like spot which is destitute of the central spot or pupil.

*Body*, includes every part of the insect, and is divided into *head*, *thorax*, and *abdomen*.

*Boreal*, of or belonging to the north.

*Botryoidal*, clustered like a bunch of grapes.

*Brachial nervures*, those nervures of the anterior wing that originate at the thorax, and run somewhat parallel with the *interior edge*, towards the *posterior angle* or *posterior edge*, often connected with the *cubital cellules* by means of the *recurrent nervures*.

*Bronze*, the color of old brass.

*Brunneus*, pure very dark brown.

*Bullate*, blistered.

## C.

*Caducus*, shedding; easily and quickly falling off.

*Cæruleus*, color of the sky; sky-blue.

*Cæsius*, pale blue, approaching gray.

*Calathiform*, bowl-shaped: hemispherical and concave. See *crateriform*, *proculiform*.

*Calcarate*, having a spur.

*Calyculate*, double-cupped: one cup placed within another.

*Campanulate*, bell-shaped: more or less ventricose at the base, and a little recurved at the margin.

*Canaliculate*, channelled: excavated longitudinally, with a concave line in the middle.

*Cancellate*, or *cancelled*, cross-barred; latticed; having longitudinal lines or grooves decussate by transverse ones.

- Carinate**, keeled; resembling a keel; having a longitudinal prominence like the keel of a boat.
- Carious**, corroded, or having the appearance of being worm-eaten.
- Carnceous**, flesh-colored.
- Carpus**, or *punctum*, is at the extremity of the *radius* and *cubitus* of the anterior wing; this is the joint in the wing of some insects, by means of which it is folded transversely: it has been called *stigma* in the Neuroptera, and is often opaque.
- Cartilaginous**, of the consistence of cartilage or gristle.
- Carcuncle**, a soft, naked, fleshy excrescence.
- Cataphracted**, invested with a hard callous skin, or with scales closely united.
- Caterpillar**, the *larva* or *eruca*.
- Cauda**, the tail: the posterior and terminal part of the *abdomen*; an appendage of any kind terminating the abdomen is usually called by this name. See *anus*.
- Caudate**, generally applied to the posterior wings of Lepidoptera, to indicate tail-like projections or processes.
- Caudula**, taillets; little tails.
- Cellule**, a portion of the *wing* included between the *nervures*. See *radial cellule*.
- Cernuous**, bent; the apex bent downward. See *mutant*.
- Cespitose**, matted together.
- Cheek**, the *gena*; a portion of the head beneath the eyes on each side.
- Chela**, the terminal portion of a foot, which has a moveable lateral toe like the claw of crab.
- Chrysalis**, the second stage of the insect from the egg; particularly the second state of Lepidopterous insects, of which *caterpillar* or *eruca* is the first; the *pupa*.
- Cicatriz**, a scar; an elevated, rigid spot.
- Ciliate**, fringed; set with parallel hairs, bristles, &c.
- Cinereous**, ash-color; gray tinged a little with blackish; the color of wood ashes.
- Cingula**, a colored band.
- Circinal**, spirally rolled inwards and downwards, as in the *lingua* of Lepidoptera.
- Class**, one of the principal divisions in a system or arrangement of natural bodies.

*Clavate*, club-shaped; gradually becoming thicker towards the end. See *capitate*.

*Claw*, the *unguis*.

*Clypeus*, the superior portion of the head in Coleopterous insects.

*Coadunate*, joined together at base; two or more joined together; (elytra) permanently united at the suture.

*Covariate*, contracted; compact; opposed to effuse; (*metamorphose*) that species of change in which the pupa assumes a cylindrical shape, all the members of the body being concealed as in the family of Hippobosca. See *incomplete*, *semicomplete*.

*Coccardes*, retractile vesicular bodies on each side of the *stethidium* of insects of the genus *Malachinus*.

*Coccineous*, the color of the blossom of the saffron.

*Cochleate*, twisted spirally like a screw, or a univalve shell.

*Cocoon*, a *follicle*.

*Coenogonous*, oviparous at one season of the year, and ovoviviparous at another, as the Aphides.

*Coleoptera*, the first order of insects, having coriaceous elytra, not lapped one over the other at tip; coriaceous elytra.

*Collar*, the *collum*.

*Collare*, the somewhat elevated posterior part of the *collum*.

*Collum*, the neck or collar; the anterior segment of the *trunk* in such insects as have that part of the body divided into several pieces, as in the Hymenoptera, Lepidoptera, &c.; in reality it corresponds with the *thorax* of the Coleoptera, &c. See

- Connate**, united at base.
- Convergent**, converging or approaching; closing.
- Contiguous**, touching; placed so near as to touch. See *approximate*.
- Contorted**, twisted; incumbent upon each other in an oblique direction.
- Convolute**, rolled or twisted spirally: (wings) wrapping around the body, the outer surface being convex. See *revolute*, *involute*.
- Converging**, approaching each other towards the tip; *convergent*.
- Corbicular**, in many species of Hymenoptera, is a fringe of hairs on the posterior tibiae, arising from the margins of the limb only. See *scopa*.
- Cordate**, heart-shaped: it is not absolutely necessary that an emargination should exist on the anterior part, but it requires that the object be somewhat triangular with the corners of the base rounded.
- Coriaceous**, leather-like; thick, tough, and somewhat rigid.
- Cornaceous**, of a horny substance; resembling horn.
- Corniform**, horn-shaped; long, mucronate, or pointed.
- Cornutus**, horn-shaped.
- Corona**, a crown-like appearance.
- Corpus**, the body.
- Corrugated**, wrinkled.
- Costa**, the thickened anterior margin of a wing, between the base and apex. See *stigma*.
- Costal-margin**, the anterior margin of wing.
- Costate**, ribbed; marked with elevated thickened lines.
- Coxa**, the two-jointed base of the feet; the *apophysis*, consisting of the *patella* and *trochanter*.
- Crateriform**, somewhat like *calathiform*, but not so much inflated, and rather approaching to *infundibuliform*. See *urceolate*.
- Crenate**, scalloped; differs from *serrate* and *dentate*, in having rounded teeth, not directed towards either end.
- Cruciate**, cross-shaped; having the shape of a cross; (wings) incumbent, but the inner margins lay one over the other.
- Crustaceous**, somewhat hard, elastic, resisting the pressure of the finger.

*Cubital-cellule*, a portion of the *superior wing*, included between the nervure of the *radial cellule* and a *nervure* which originates near the extremity of the *cubitus*, and runs in a curvilinear direction towards the extremity of the wing; it is *complete* if this nervure reaches the *posterior edge*, and *incomplete* if the nervure is abbreviated; it is often divided into two or three parts by transverse nervures; when one of these parts or small cellules appears to be supported by a petiole it is termed a *petiolated cellule*; it is called *submarginal cellule* by some authors.

*Cubitus*, the second nervure of the *exterior margin* of the wing, extending from the base to the *carpus*; it is separated from the *radius* by an intermediate membrane.

*Cucullate*, cone-shaped; hooded.

*Cultrate*, shaped like a pruning-knife.

*Cuneiform*, wedge-shaped; broad and truncated at one end, and attenuated to the other.

*Cupreous*, coppery; the color of copper.

*Cuspidate*, prickly-pointed; ending in a sharp point; an acuminate point ending in a bristle. See *mucronate*.

*Cursory*, formed for running. See *natatory*.

*Cyathiform*, wineglass-shaped; more or less obconical and concave. See *calathiform*, *acetabuliform*.

*Cyaneus*, dark-blue, like prussian-blue.

*Cydariform*, globose, but truncated at two opposite sides.

*Cymbiform*, boat-shaped; *navicular*.

- Dendroid*, shrub-like; having the appearance of a little tree.
- Dentate*, toothed; with acute teeth, the sides of which are equal, the tip being opposite to the middle of the base. See *serrate*.
- Dentato-serrate*, tooth-serrated; the denticulations being themselves serrated on their edges.
- Dentate-sinuate*, toothed and indented.
- Denticulated*, set with little teeth or notches.
- Denuded*, or *denudated*, destitute of covering; (wings) without scales or hair.
- Dependent*, hanging down.
- Depressed*, pressed downward: more or less flattened vertically; the vertical diameter much shorter than the transverse diameter. See *compressed*.
- Detonant*, exploding; emitting a sudden noise.
- Diaphanous*, semitransparent; clear.
- Dichotomous*, forked; dividing by pairs.
- Diffracted*, bending in different directions.
- Diffuse*, spreading.
- Digitate*, finger-like: divided like fingers nearly to the base.
- Digitus*, the terminal joints of the *tarsus* and *manus* divided into *unguis* and *pulvillus*.
- Dimidiatus*, half round; extending half way round; (elytra) covering but half the tergum.
- Dioptrate*, applied to an ocellate spot, of which the pupil is divided by a transverse line.
- Diptera*, that order of insects comprehending those that have only two wings.
- Disk*, the surface within the margin.
- Dissipated*, applied to designate a stria or line which is *interrupted* in its continuity, but of which the tips at the interrupted parts are not in a right line with each other.
- Disilient*, bursting open elastically.
- Distinct*, (antennæ) not united at base.
- Divaricate*, straddling; spreading out; (wings) incumbent, but diverging behind.
- Diverging*, spreading out widely, so as to form nearly a right angle.
- Dolabriform*, hatchet-shaped; compressed with a very prominent dilated keel and cylindrical base. See *securiform*.

*Dorsal*, of the back.

*Dorsum*, the posterior portion of the *stethidium* on the superior surface of the body, directly above the *postpectus*, and bounded behind by the *tergum*; in the Coleoptera it is covered by the basal portion of the elytra.

*Duplicate*, doubled.

## E.

*Ecalcarate*, without a spur or horn.

*Echinate*, set with prickles.

*Edentulous*, destitute of teeth.

*Edge*, of a surface, is that line which includes the *margin*, and forms the extreme boundary; the elytra of many Coleoptera have a deflected margin beneath the edge called *epipleura*.

*Effected*, bent outwards somewhat angularly.

*Egg*, the first state of the insect.

*Elliptical*, elongate-oval; differs from oval by having the lines nearly parallel in the middle.

*Elytra*, coriaceous, opaque, more or less solid lamellæ, separated in repose by a rectilinear *suture*, substituted for the anterior wings and covering the *dorsum* and *tergum* in repose; including *base*, *tip*, *humerus*, and *epipleura*. See *hemelytra*.

*Emarginate*, notched; terminating in an acute notch at tip. See *sinuate*.

*Ensiform*, sword-shaped; two-edged, large at base, and tapering towards the point. See *incipital*.

*Entire*, (wings) with a simple margin; not indented on the edge.



*Eruca*, the state of Lepidopterous insects succeeding the egg; caterpillar: larva.

*Escutcheon*, the scutel.

*Essential character*, a peculiar trait, distinguishing the genus or species from all others.

*Exaratus*, sulcated.

*Exarticulate*, having no distinct joints.

*Excaudate*, or *ecaudate*, (wings) destitute of tail-like processes.

*Excurved*, curved outwards.

*Explanate*, spread out; fiat.

*Exscutellate*, having no scutel.

*Exserted*, protruded; opposed to inclosed; (aculeus) projecting, not concealed within the body.

*Extended*, (wings) not lying one upon the other.

*Exterior edge*, or *anterior edge*, of the wings; it extends from the base to the apex.

*Exterior margin*, (wing) the anterior margin from the base to the apex.

*Exterior palpi*, the *maxillary palpi*.

*Exuvia*, the cast-off skin, the rejected covering. See *vernantia*.

*Eyes*, organs of sight, composed of very numerous hexagonal lenses; all insects have two eyes besides the *stemmata*.

#### F.

*Face*, or *facies*, the anterior and superior portion of the head; including *vertex*, *stemmata*, *eyes*, *front*, and *nasus*.

*Falcate*, shaped like a sickle; convexly curved before and concave behind.

*Farctus*, filled full.

*Fascia*, a transverse band or broad line; a fascia is said to be *common*, when it passes over both the superior and inferior wings, as in many species of Lepidoptera, or when it passes across the two elytra in Coleoptera. See *striga*.

*Fasciated*, banded.

*Fascicle*, a bundle.

*Fasciculate*, bundled; clustered as in a bundle; tufted.

*Fastigate*, flat-topped; of an equal height.

*Fatiscent*, spontaneously mouldering and falling to pieces in the air.

*Favose*, honeycomb-like ; with large deep holes like the cells of a honeycomb. See *scrobiculate*.

*Feelers*, the palpi.

*Feet*, six organs of motion situated beneath the body ; consisting of *apophysis*, *femur*, *tibia*, *manus*, *tarsus*, *plantus*, and *palma*.

*Femur*, the *thigh*, or third joint of the feet.

*Fenestrate*, applied to the naked hyaline spots on the wings of many of the Lepidoptera.

*Ferruginous*, the color of the oxide of iron ; brown approaching yellow.

*Filate*, (antennæ) simple, without a lateral hair or dilatation ; this word is used in the order Diptera.

*Filiform*, thread-shaped ; slender and of equal thickness. See *setaceous*, *clavate*.

*Filose*, ending in a thread-like process.

*Fimbria*, thick ciliated hairs at the termination of the abdomen ; conspicuous in the genus *Andrena*. See *scopa*, *flocculus*.

*Fimbriated*, fringed.

*Fissile*, cloven ; divided into parallel lamellæ, as in the antennæ of *Scarabæus*, and the wings of the Alucitadæ. See *lamellate*.

*Fissure*, a crevice ; a narrow solution of continuity.

*Fistular*, hollow ; applied to a hollow cylinder.

*Flabelliform*, fan-shaped.

*Flaccid*, limber ; feeble ; lax.

*Flagellum*, the terminal portion of the antennæ situated beyond the *pedicellus* ; the *apex*.

*Fornicate*, arched or vaulted.

*Fossula*, a sinus; a small hollow; *foveola* and *scrobiculus* have nearly the same meaning.

*Foveolate*, covered superficially with cavities like a honeycomb.

*Fragile*, brittle, easily broken.

*Front*, anterior portion of the head, included by the *eyes*, *vertex*, and *nasus*, and supporting the *antennæ*; (Diptera) that portion of the head which is above the *antennæ* and between the *eyes*, its superior portion is called the *vertex*.

*Fulcrum*, the corneous body on which the base of the *tubus*, or sheath of the tongue, in the Hymenoptera, rests; it is "le pivot" of Reaumer.

*Fuliginous*, sooty; of the color of soot.

*Fulvous*, orange-yellow.

*Furcated*, forked; terminating in two divisions.

*Fuscus*, dark brown, with a slight mixture of gray.

*Fusiform*, spindle-shaped; gradually tapering more or less to each end.

## G.

*Galea*, helmet; a dilated inarticulate membranaceous piece on each *maxilla*, that, together with the *labrum*, covers the organs of the mouth in the Orthoptera and some of the Neuroptera.

*Gastric*, of or belonging to the belly.

*Gelatinous*, jelly-like; having the consistence of jelly.

*Geminate*, situated in pairs.

*Gena*, cheek; a portion of the head on each side immediately beneath the eye, often turgid.

*Geniculate*, knee-jointed; bending abruptly in an obtuse angle.

*Genus*, an assemblage of *species* which correspond in particular characters.

*Geometra*, larvæ which when walking, alternately elevate and straighten the middle of the body, as in those of the genus

*Geometra*; opposed to *rectigrade*.

*Gibbus*, hump-backed; protuberant.

*Glabrous*, smooth; opposed to *hairy*, *downy*, *villous*, &c.

*Glaucous*, gray-bluish-green.

*Globular*, like a round ball; all the diameters equal.

*Glochis*, a barbed point.

*Glomerate*, congregated.

*Glutinous*, slimy, viscid.

*Gracile*, slender.

*Granulated*, covered with small grains.

*Gregarious*, living in society, as many of the larvæ of Lepidoptera that fabricate a common web.

*Griseus*, light gray.

*Grub*, the larva; generally applied to the immature Scarabæus.

*Gula*, concave portion beneath the head, between the base of the *mentum* and the *jugulum*.

*Gymnopteræ*, membranaceous and transparent wings without scales.

#### H.

*Habit*, or *habitus*, the port or aspect; used comparatively to express a resemblance in general appearance, apart from more important markings derived from organization.

*Habitation*, or *habitat*, a situation or locality frequented by insects.

*Haletres*, the *poisers*, capitate moveable filaments, in the Diptera, situated one on each side of the thorax, substituted for the inferior wings, and often covered by the *scale*; they are said to be *naked* when destitute of the scale.

*Hamuli*, minute hooks in Hymenoptera, situated on the anterior margin of the under wing, they lay hold of the hind margin of the upper wing.

*Hamus*, a hooked process, covered with scales, situated under

*Heels, the spinule.*

*Hemelytra, scales, generally coriaceous at base, and membranaceous at tip, not divided by a straight suture, and substituted for the anterior wings, as in the Orthoptera and Hemiptera.*

See *tegmina*

*Hemispheric, convex above and flat below, like the half of a globe.*

*Hepatic, liver-brown.*

*Hexapode, having six feet, as in all true insects.*

*Hirsute, rough with strong hairs; shaggy. See pilous, villous, tomentous.*

*Hispid, bristly; rough with stiff, short, sparse hairs. See strigose.*

*Hoary, covered with a fine white silvery substance or pubescence.*

See *pruinous*.

*Homotene, retaining the primitive form; referring to those articulated animals with feet, that do not change their form with their vernantia.*

*Horizontal, (wings) when at rest parallel to the horizon.*

*Horns, a word used by some writers to designate the antennæ.*

*Humerus, the region of the exterior basal angle of the elytra; according to Meigen it is the anterior angles of the thorax in Diptera.*

*Hyaline, transparent; vitreous.*

*Hymenoptera, an order of insects, comprehending those with four membranaceous naked wings, as the bees and wasps.*

*Hypocrateriform, salver-shaped.*

*Hypostoma, that portion of a Dipterous insect which is included between the antennæ, the eyes and the mouth; called by some naturalists clypeus.*

## I.

*Imago, the perfect insect, after having passed through the states of larva and pupa.*

*Imbricate, tiled; placed one over another like shingles on the roof of a house.*

*Immaculate, destitute of spots.*

*Immarginate, having no elevated margin or rim.*

*Imperfect, or incomplete metamorphose, is that species of change from the larva to the imago, in which the feet and wings of the pupa are immoveable, as in the Coleoptera, Lepidoptera, &c.*

*Incānus*, hoary.

*Incisure*, or suture of the abdomen, is an impressed transverse line, marking the juncture of two segments.

*Inclining*, leaning.

*Inconspicuous*, not readily discernible. See *obsolete*.

*Incrassated*, thickened, swelled out at some particular part.

*Incumbent*, resting against; one lying over the other; (*wings*) which, when the insect is at rest, cover the back of the abdomen horizontally.

*Incurved*, bowed inwards. See *recurved*.

*Indurated*, hardened.

*Inequal*, unequal; with irregular elevations and depressions on the surface.

*Inferior wings*, those that are farthest from the head, otherwise called *posterior wings*; they are generally smaller than the *superior* or *anterior wings*; many are provided with *hamuli*.

*Inflected*, bent inwards at an angle.

*Infracted*, bent inwards abruptly, as if broken.

*Infundibuliform*, funnel-shaped.

*Inner margin*, or *interior margin*, of the wings, is that margin which extends from the *base* to the *posterior angle*.

*Institia*, stria of equal breadth throughout.

*Instrumenta cibaria*, the *trophi*; parts of the mouth taken collectively.

*Interior edge*, or *inner edge*, the boundary of the *inner margin*.

*Interior palpi*, the *labial palpi*.

## J.

*Joint, articulation* ; this word is applied to the space between two incisures, as the divisions of the antennæ.

*Jugulum*, that cavity of the posterior part of the head to which the neck is annexed.

## K.

*Keel, the carina.*

## L.

*Labial palpi*, articulated filaments, one on each side of the *labium* ; the *interior* or *anterior palpi*.

*Labiated*, having lips.

*Labium*, lower lip ; composed of the *mentum*, and *ligula* or tongue ; it supports the *labial palpi*.

*Labrum*, upper lip ; the superior member of the *trophæ* ; it is generally moveable, and applied to or placed immediately beneath the *nasus*, and above the *mandibles* ; it is sometimes entirely concealed ; it is the labium of some authors.

*Lacerated*, ragged ; torn.

*Lacinix exteriores*, (in the family *Apidæ*.) two elongated, flattened or concave, biarticulate valves, situated on the tongue and near their tip supporting the *labial palpi* ; they are distinguished from those palpi by being flat instead of cylindrical.

*Lacinix interiores*, (in the family *Apidæ*.) two inarticulate, membranaceous valves, which embrace the tongue at its entrance into the *tube*.

*Laciniated*, jagged ; cut into irregular segments.

*Lactescent*, yielding or secreting a milky fluid.

*Lacteus*, of a shining white or milky color.

*Lacunose*, pitted ; having the surface covered with small cavities.

See *furose*.

*Lamella*, a thin plate or foliation.

*Lamellated*, (antennæ) divided laterally into distinct plates or foliations. See *fissile*, *setaceous*, &c.

*Lanate*, woolly ; covered with dense, fine, long, white hairs, so distinct that they may be separated. See *tomentose*.

*Lanceolate*, lance or spear-shaped ; oblong and tapering to the end.

*Larva*, the first state of an insect subsequent to the egg ; it is known by the names maggot, grub, caterpillar, &c. ; it is slow, sterile, and voracious ; the old authors called it *eruca*.

*Lateral*, situated on the side.

*Lateritious*, brick-color; like *miniatus*, but duller, and verging towards yellow.

*Latticed, cancellated.*

*Leg*, the tibia.

*Lenticular*, spherically convex on both sides; a depressed double convex figure.

*Lepidoptera*, an order of insects, of which the wings are four in number, covered by minute imbricated scales; as butterflies and moths.

*Leprous*, with loose irregular scales.

*Ligula*, tongue; the superior portion of the *labium*; it is situated beneath the *maxillæ*, generally of a soft texture, often bifid, and frequently coriaceous at base. See *lingula*, *rostellum*, *rostrum*, *haustellum*, *proboscis*, *promuscis*, and *tubus*.

*Ligulate*, strap-shaped, cut off at top; somewhat linear, and much longer than broad.

*Lilacinous*, lilac color; like *violaceous*, but duller, tinged with red.

*Limb*, the circumference.

*Line*, the twelfth part of an inch.

*Linear*, with parallel sides; narrow and nearly of a uniform breadth.

*Lineated*, lined; streaked; marked with lines.

*Lingua*, a bivalve, involuted, obtuse and fistulous tongue, composed of two elongated semitubular fillets, which are in reality elongated *maxillæ*, as in the *Lepidoptera*; the central organ



*Lora*, small corneous cords upon which the base of the proboscis is seated; these parts seem to be intended to let out or draw in the proboscis; when the latter is projected they point towards the mouth, and when it is retracted they point towards the breast; they are "les leviers" of Reaumur.

*Lubricous*, covered with a slippery mucous.

*Lucid*, shining; applied to insects which shine by night, as *Lampyris* and *Fulgora*.

*Luciferous*, giving light.

*Lunate*, crescent-shaped; formed like a new moon.

*Lurid*, of a brownish-blue color.

*Luteus*, unmixed yellow.

*Ligate*, cut into several transverse segments, and gradually enlarging towards the extremity; lyre-shaped.

#### M.

*Macula*, a spot larger than a *puncture*, of an indeterminate figure, and of a different color from the general surface.

*Maculated*, spotted; marked with spots.

*Macrianum*, that segment of the *postpectus* situated one on each side behind the *acetabulum* and *parapleurum*; it supports the posterior feet.

*Maggot*, the *larva*; commonly applied to the immature fly (*Musca*).

*Mandibles*, the upper jaws, generally corneous, placed one on each side immediately beneath the *labrum*, and above the *maxillæ*, moving transversely; they are the maxillæ of Kirby, and are destitute of *palpi*.

*Manus*, the hand; the articulated termination of the anterior feet; the anterior *tarsus*, including *palma*.

*Marcrescent*, shrivelling.

*Margin*, that portion of a surface which is within the *edge*, bounded on the inner side by the *submargin*, and consisting of a more or less dilated imaginary line.

*Marginal cellules*, the *radial cellules*.

*Marginated*, surrounded by an elevated or attenuated margin.

*Maxillæ*, jaws; one on each side of the mouth immediately beneath the *mandibles*, moving transversely, usually corneous at base, and membranaceous or coriaceous at tip, and furnished with one or two *palpi*.

*Oblate*, flattened ; this term is applied to a spheroid of which the diameter is shortened at two opposite ends.

*Oblong*, the transverse diameter much shorter than the longitudinal.

*Obovate*, inversely egg-shaped, the narrow end downwards or towards the base.

*Obsolete*, indistinct ; inconspicuous.

*Obtect*, (pupa) wrapped in a crustaceous covering.

*Obtuse*, blunt ; ending in a segment or circle.

*Occiput*, the hinder part of the head ; the part behind the *vertex*.

*Ocellate*, applied to the eye-like spots on the wings of Lepidopterous insects, usually formed of a differently colored iris or ring, inclosing one or more small spots.

*Ocelli*, the *stemmata*.

*Oculi*, the *eyes*.

*Ochreous*, yellow with a slight tinge of brown.

*Onychii*, two or three small processes between the *unguis* at the termination of the *tarsus*. See *pulvillus*

*Operculum*, a lid ; a small valvular appendage.

*Opposite*, placed on the side opposite to another, so that the bases of the two are on the same transverse line. See *alternate*.

*Orbicular*, round and flat, the diameters of the plane equal.

*Orbit*, an imaginary border around the eye.

*Order*, the subdivision of a class.

*Os*, the *mouth* and its parts.

*Oval*, somewhat egg-shaped, but the outlines of the ends are

- Pagosa superior*, the upper surface of a wing.
- Paleaceous*, chaffy.
- Pallide-flavens*, pale or whitish yellow.
- Pallidus*, of a pale cadaverous hue.
- Palma*, palm; the basal tarsal joint of the anterior feet, sometimes furnished with *strigilis*. See *manus*.
- Palmate*, hand-shaped; cut down nearly half-way to the base into subequal, oblong segments, leaving an entire space like the palm of the hand.
- Palpi*, articulated moveable filaments in the mouth of insects, generally shorter than the antennæ; divided into *labial* and *maxillary palpi*.
- Panduriform*, fiddle-shaped; oblong, broad at the two extremities, and contracted in the middle.
- Papilionaceous*, butterfly-like.
- Papillary*, having the apex semiglobular; somewhat like a nipple; this term ought to be distinguished from *verrucose*.
- Papilous*, pimpled; having the surface covered with raised dots or pimples. See *verrucose*.
- Pappus*, down.
- Parallelogram*, a quadrilateral, right-lined figure, whose opposite sides are parallel and equal to each other.
- Parapleurum*, that segment of the *postpectus*, which is situated one on each side of the *acetabulum*, behind the *scapula*; in some genera are two on each side; they may be distinguished into *anterior* and *posterior*.
- Parasitical*, inhabiting another animal.
- Parietes*, walls; perpendicular sides of the honeycomb; sides of elevated bodies.
- Patulus*, open; spreading.
- Pearlaceous*, having the appearance of pearl.
- Pecten*, in Hymenoptera, rigid, incurved setæ which arm the exterior margin of the upper part of the base of *valvulæ* or *maxillæ*.
- Pectinate*, comb-shaped; cut into regular straight segments like the teeth of a comb. See *perfoliate*, *setaceous*.
- Pectus*, the anterior, inferior portion of the trunk, included, between the head and *postpectus*.

*Pedes*, the feet; this term is applied to the whole limb, consisting of *femur*, *tibia*, *tarsus*.

*Pedicellus*, the third joint of the antennæ, particularly in Hymenoptera, often forming the pivot, turning in the socket of the *scapus*, upon which the other articulations, constituting the *apex*, sit, and by means of which they often form an angle with that part; it is "le bouton" of Reaumur.

*Pedicle*, a *pedicellus*.

*Peduncle*, a stalk or petiole.

*Pedunculated*, elevated on a stalk or peduncle.

*Peltate*, target-shaped.

*Pendent*, hanging down.

*Penicilliform*, pencil-shaped.

*Penis*, the genitals of the male, consisting of *forceps* and *phallus*.

*Pennaceous*, feathered like the web of a quill. See *plumous*.

*Penultimate*, the last but one.

*Perennial*, continuing for several years.

*Perfoliate*, perforated; applied to those antennæ of which the joints are transversely divided into thin plates, which are connected by a common stalk passing nearly through their centres. See *clavate*, *pectinate*.

*Peristaethium*, that segment of the *postpectus* anterior to the insertion of the intermediate feet; it extends laterally to the *scapula*, and is generally connected with the *pectus* by a membrane.

*Persistent*, permanent.

**Plane**, a level or rectilinear surface, destitute of elevations or depressions; a curved surface cannot be plane because it is not rectilinear. See *equal*.

**Planta**, the basal joint of the *tarsus* of the posterior pairs of feet in Hymenoptera, often dilated or elongated, containing *scapula*. See *palma*.

**Pleura**, the side of the *stethidium*, between the *thorax* and *pectus*.

**Plicate**, plaited; folded like a fan.

**Plumous**, feathered; with fine hairs on each side so as to resemble a feather. See *pennaceous*.

**Poicera**, the *halteres*, in the Diptera, a capitate moveable filament on each side, substituted for the inferior wings.

**Polliniferous**, formed for collecting the pollen of plants, as in many of the Hymenoptera.

**Polymorphous**, undergoing a *metamorphose*; applied to those articulated animals with feet that undergo a metamorphose, either partial or total. See *homotene*.

**Polyphagous**, eating a variety of food.

**Porcate**, marked with raised longitudinal lines.

**Porrect**, stretched out; prominent; elongated forwards.

**Posterior angle**, of the wing, is the junction of the *posterior edge* with the *interior edge*; of the *thorax*, is the lateral angle near the base of the elytra.

**Posterior edge**, the boundary of the *posterior margin*.

**Posterior margin**, of the wing, extends on the hind part of the wings from the *apex* to the *posterior angle*. See *inner margin*.

**Posterior wings**, the *inferior wings*.

**Postpectus**, the posterior portion of the *stethidium* on the inferior surface of the body, consisting of several pieces, which in the Coleoptera particularly are the *peristaethium*, *acetabulum*, *parapleurum*, *scapula*, and *maerianum*.

**Prasinus**, grass-green, without any tinge of blue.

**Premorse**, as if bitten off; with a blunt or jagged termination.

**Prismatic**, like a prism; of equal thickness and having several flat sides; differs from cylindrical in being angular.

**Proculiform** [poculiform], hollow and cylindrical, with a hemispherical base, the sides at top straight and not recurved. See *calathiform*, *cyathiform*.

*Proboscis*, the inarticulate *trophi* of the Muscæ, and is sometimes soft, labiated and generally retractile, sometimes horny and acute; according to Kirby it is the tongue of the Hymenoptera with all the apparatus, and its *vagina*.

*Procumbent*, trailing; prostrate; lying flat. See *decumbent*.

*Promusci*, according to Illiger, is the *trophi* of the Hymenoptera.

*Pruinous*, covered with a frosty kind of woolliness; hoary.

*Pterigostia*, or *wing-bones*, the *nervures*.

*Pubescent*, coated with very soft, fine wool, hair or down, which is short and not crowded. See *villous*, *tomentous*.

*Pulverulent*, dusty.

*Punctured*, marked with small impressed dots. See *scrobiculate*, *variolous*.

*Pulvillus*, the soft termination of the foot between the *unguis*; it is "un petit mammelon" of Degeer. See *onychii*.

*Puniceous*, carmine color.

*Pupa*, the second state of the insect from the egg, often quiescent; the members being more or less concealed by the common integument. See *aurelia*, *nympha*, *chrysalis*.

*Pupil*, of an ocellate wing-spot, is the central spot which is surrounded by the *iris*.

*Pyriform*, pear-shaped.

#### Q.

*Quadrangular*, having four angles.

*Quadrata*, square; somewhat square.

*Quadrilateral*, having four sides.

*Quiescence*, a state of hibernation somewhat resembling torpidity.

- Radiated*, furnished with lines which proceed from a common centre. See *stellate*.
- Radiola*, radicle; the basal joint of the antennæ, attached to the head.
- Radius*, the first nervure of the *external edge* of the superior wing; it extends from the *base* to the *carpus*, and is separated from the *cubitus* by a membrane.
- Ramosus*, having branches; branched.
- Raptatory*, formed for seizing a prey.
- Recurvate*, curved in a convex, then in a concave line.
- Recondite*, (*aculeus*) concealed within the abdomen, seldom exposed to view.
- Rectigrade*, larvæ, which having sixteen feet, walk with a rectilinear body. See *geometræ*.
- Rectangular*, in the form of a right angle; having an angle of ninety degrees.
- Rectilinear*, right-lined; formed in a straight line.
- Recurrent nervures*, one or more ascending branches of the *brachial nervures*, which are inserted into the *cubital cellules*, sometimes into the first and second, sometimes into the second and third, and others into one only.
- Recurved*, bowed backwards.
- Reflected*, or *reflexed*, bent back rather angularly.
- Refracted*, bent back as if broken.
- Remote*, further removed than distant.
- Reniform*, kidney-shaped.
- Repend*, wavy; with alternate segments of circles and intervening angles. See *scalloped*.
- Replicatile*, capable of being folded back.
- Resilient*, having the property of springing back.
- Resupinate*, upside down; horizontally reversed.
- Reticulate*, like net-work.
- Retinaculum*, horny moveable scales in the Hymenoptera, serving instead of muscles to move the *spicula*, or to prevent it from being darted out too far.
- Retracted*, opposed to prominent; drawn back.
- Retractile*, generally exerted, but capable of being drawn in.
- Retrorse*, (sinuate) pointing backwards; (serrate) inversely serrated.

*Retuse*, ending in an obtuse sinus, or broad shallow notch ; terminated by an obtuse hollow.

*Reversed*, (wings) deflexed, the margin of the posterior wings projecting beyond that of the anterior wings.

*Reviviscence*, the awakening from torpidity ; the restoration from suspended animation.

*Revolvute*, rolled backwards spirally. See *convolute*.

*Rhombus*, a quadrangular figure, having its four sides equal and its opposite lines parallel, with two opposite angles acute and two obtuse.

*Rhomboid*, a figure approaching to a rhombus.

*Rigid*, inflexible, not easily bending ; opposed to limber.

*Rimose*, full of cracks.

*Ringent*, gaping.

*Roseus*, color of a rose, a pale blood red.

*Rostellum*, a little bill or beak ; it is horny and articulated as in Cimex, &c. ; it is the "rostrum" of Latreille. See *rostrum*.

*Rostrum*, an immoveable prolongation of the head, at the end of which is the mouth, as in the Curculio kind. Latreille applies this term to the *rostellum* of the Cimices.

*Rotate*, wheel-shaped.

*Rudiment*, the incomplete formation of a part or organ.

*Rufous*, reddish.

*Rugous*, wrinkled ; with irregularly waved and elevated lines.

See *corrugated*.

*Runcinate*, notched ; cut into several transverse acute segments which point backwards.



*Scapula*, that segment that is situated one on each side of the *peristæthium*, on the anterior lateral angle of the *postpectus*, immediately beneath the humeral angle of the elytrum; it is bounded behind by the *parapleurum*.

*Scapus*, scape; the second articulation of the antennæ, often elongated; it is the "bulbus" of Linné, and "le fuseau" of Degeer.

*Scopa*, thick hair, covering the posterior tibiæ of some Hymenopterous insects; it is used in collecting and carrying pollen. See *scopula* and *corbicula*.

*Scopula*, bristles or rigid hairs, in some Hymenopterous insects, covering the inside of the *plantæ*, principally those of the posterior feet; it is very conspicuous in *polleniferous* insects; it is the "scopa" of Schrank, and "la brosse" of Reaumur. See *scopa*, *fimbria*, *floculus*.

*Scriptus*, lettered; marked with various characters resembling letters.

*Scrobiculated*, pitted; having the surface covered with hollows; with deep round pits. See *favose*.

*Scrotiform*, purse-shaped.

*Scutel*, or *scutellum*, a small subtriangular portion of the superior surface of an insect, generally separated by a suture from the middle of the base of the thorax.

*Scutellar angle*, (of the *elytra*) is the angle next to the scutel.

*Secund*, pointing one way; unilateral.

*Securiform*, hatchet-shaped; triangular-compressed like the iron part of a hatchet. See *dolabriform*.

*Segment*, of the abdomen, is a ring or division of that part, and is bounded by sutures or *incisures*.

*Semicomplete*, (metamorphose) in this kind of change the insect continues active and feeds, as in *Grillus*. See *coarctate*, *incomplete*.

*Semicylindric*, flat on one side; the form of the longitudinal half of a cylinder.

*Semioyittate*, half arrow-shaped; like the longitudinal half of an arrow-head.

*Septum*, an internal division of a tubular body.

*Sericeous*, having the surface shining by means of dense, minute, short, silky hair. See *pubescent*.

*Serrate*, like the teeth of a common saw ; differs from *crenate* in having the teeth acute, and from *dentate* in having them directed towards one end, the tips not being opposite to the middle of their base.

*Sesquiterial*, occupying the fourth part.

*Sesquicellus*, or *sesquialter*, a large ocellus including a smaller one.

*Sessile*, connected immediately with the part from which it originates, without the intervention of a peduncle ; (*abdomen*) attached to the *stethidium*, by a considerable part of its whole breadth.

*Seta*, a bristle.

*Setaceous*, bristle-shaped ; slender and gradually attenuated to the tip. See *capillary*, *filiform*.

*Setarious*, *aristate* ; terminating in a simple naked bristle, as in the antennæ of some of the Diptera.

*Setous*, bristly, set with bristles.

*Sexes*, of insects, are distinguished in Entomological works by ♂ (*Mars*) for male, and ♀ (*Venus*) female.

*Shank*, the *tibia*.

*Simple*, destitute of any remarkable process or appendage ; (*thighs*) equal, not dilated or formed for leaping ; (*aculeus*) having only a single dart or point, not *vaginate*.

*Sinuate*, indented ; cut into deep sinuses.

*Sinus*, a curvilinear indentation more or less profound ; differs from *emargina* in not being angulated ; an excavation as if

*Spicula*, the instrument with which the female lays her eggs.

See *vagina*.

*Spinous*, armed with acute processes or spines.

*Spinous-radiate*, beset with spines in a circle, either *concatenate*, united at their bases, or *setaceous*, like bristles.

*Spinulæ*, spinous processes at the base of the tibia, in Hymenopterous insects, including *velum*; they are the "spines" or "spurs" of Degeer, and *heels* of Leach.

*Spiracula*, *Spiracle*, one of the lateral orifices of the trunk and abdomen, through which insects respire; the *stigmata*.

*Spiral*, revolving obliquely like a corkscrew; or rolled up like a watch-spring.

*Sporious*, this word is applied to the anterior feet of some of the Lepidoptera, in which these members are destitute of nails, and not suitable for walking.

*Spurs*, the *spinulæ*.

*Squama*, or *scale*, a small scale above the *halteres* in the Diptera; it is composed of two pieces united at their edges, as in bivalve shells.

*Squamula*, a very small corneous, concavo-convex scale, covering the base of the superior wings in some insects.

*Squamous*, scaly; covered with scales.

*Squarrous*, scurfy; consisting of rough scales spreading every way, or divided into pieces, standing upright and not parallel with the surface.

*Stellate*, star-formed; with four or five radiating lines. See *radiated*.

*Stemmata*, two or three simple, convex, crystalline bodies on the *vertex* of many insects, resembling the eyes of spiders, &c., and probably performing the same functions.

*Sternum*, a carina or corneous process immersed in, or prominent on the *pectus*, and which extends longitudinally between the anterior feet, often elongated before or behind, or concealed by the base of the anterior feet.

*Stethidium*, the *trunk*; all that part of the body included between the head and abdomen. See *thorax*.

*Stigma*, an opaque spot on the *costal margin* of the anterior wings, of some Neuroptera, &c.; it is the "anastomosis" of Kirby, and the "punctum marginale" of Linné. See *carpus*.

*Stigmata*, the *spiracula*.

*Stipes*, the stalk or basal portion of the *proboscis*.

*Stipitate*, supported on a *pedicle*.

*Stria*, a longitudinal line, often punctured, generally proceeding from the base to the apex of the elytra.

*Striate*, scored ; marked with fine, parallel, impressed, longitudinal lines. See *sulcate*.

*Striga*, a narrow transverse line. See *fascia*.

*Strigilis*, a deep sinus near the base of the *palma* ; in some Hymenoptera it is often pectinated.

*Strigose*, clothed with rigid bristles thickest at base. See *hispid*.

*Sub*, is prefixed to many of the terms used in Entomology, and signifies that the term is not exactly applicable, in its strictly defined sense, to the subject spoken of, but that it must be understood with some latitude ; thus *subovate* is somewhat egg-shaped.

*Subcutaneous*, placed under the skin ; applied to larvæ which feed under the skin of animals, or within the substance of the leaf of a plant.

*Suberoded*, (wings) somewhat indented, but irregularly.

*Submargin*, an imaginary portion of a surface, situated exterior to the *disk*, and within the *margin*.

*Submarginal cellules*, the *cubital cellules*.

*Subocellate*, applied to a spot on the wing of a Lepidopterous Insect, when it resembles an ocellate spot, but is destitute of a pupil ; blind.

*Subulate*, awl-shaped ; linear at base and attenuated at the tip.

*Tegmina*, wing covers of the Orthoptera; the left laps over the right in *Blatta*, *Phasma*, and male *Locustæ*, and generally in *Gryllus* and *Truxalis*—the right over the left in *Mantis*, *Mantispa*, *Acheta*, *Gryllotalpa*, and some female *Locusta*. See *hemelytra*.

*Tegula*, a small scale, resembling the *squamula* of the Diptera, but more simple and solid, on the base of the superior wings of many insects.

*Tendo*, one or more bristles attached near the base of the under wing, and passing through the hook (*hamus*) in many male Lepidoptera; the females often have the *tendo*, but never the *hamus*.

*Tentacula*, retractile processes on the larvæ of some species of *Lepidoptera*.

*Teres*, nearly cylindrical.

*Tergum*, the superior portion of the abdomen, separated from the *venter* by lateral sutures, and divided into segments which are perforated each side with the *spiraculæ*.

*Terginal*, situated at the extremity.

*Tessellated*, chequered; figured like a chess-board.

*Tetraceous*, tile or brick color.

*Tetragonal*, having four corners or angles.

*Thigh*, the femur; the third joint of the feet.

*Thorax*, the dorsal portion of the *trunk*, included by the dorsal sutures, and including *tubercula*, *anterior angle*, *posterior angle*, *base*. See *pectus*.

*Thyrsus*, a cluster.

*Tibia*, the leg, or fourth joint of the *feet*; it is slender, long, enlarging towards the extremity, which is truncated; including *spinulæ*, *scopa*, and *corbicula*.

*Tip*, of the *elytra*, is that part which is opposed to the base.

*Tomentose*, covered with fine hairs so matted together that particular hairs cannot be separated. See *lanate*, *ciliate*.

*Tongue*, the *ligula* or *lingua*.

*Torus*, protuberating; swelling into knobs or protuberances.

*Torpidity*, a state of hibernation in which no exterior signs of life are exhibited. See *quiescence*, *revivescence*.

*Tortilis*, twisted.

*Transverse*, the longest diameter placed transversely with respect to the body.

*Trapezium*, a quadrilateral or four-sided figure with none of its sides parallel.

*Trichotomous*, dividing by threes.

*Tricuspidate*, ending in three points.

*Tridactylous*, having three toes or claws.

*Trigonate*, three-cornered.

*Triquetrous*, three-sided ; with three flat sides. See *trigonate*.

*Trochanter*, the second joint of the *feet*, preceding the *thigh* or *femur* ; it is also the second joint of the *apophysis* ; it is very prominent in the Carabidæ.

*Trochlearis*, pulley-shaped ; like a cylinder contracted in the middle.

*Trophi*, instrumenta cibaria ; feeders ; parts of the mouth taken collectively, composed of five principal parts, viz. *labrum*, *mandibles*, *maxillæ*, *palpi*, *labium*.

*Truncate*, cut off square at tip. See *emarginate*, *sinus*.

*Trunk*, or *stethidium*, that part of the body which intervenes between the head and abdomen, including *wings*, *feet*, *thorax*, *pectus*, *epigastrium*.

*Tubercle*, a little solid pimple.

*Tubercula*, an elevated triangular process at the anterior angle of the thorax, particularly in Hymenoptera.

*Tubulous*, formed like a tube ; fistulous.

*Tubus*, a corneous sheath at the base of the *tongue*, including *fulcrum*, *auriculæ*, and *laciniz*. Fabricius calls it the base of the tongue. Degeer names it "the intermediate piece of the sheath;" Swammerdam also considers it "the sheath of the

*Undulated*, waved obtusely, without any right lines, but in segments of circles. See *flexuous*.

*Ungiculate*, armed with a hook or nail.

*Unguis*, nail or claw, two incurved hooks which terminate the tarsus. See *pulvillus*.

*Ungulate*, hoof-shaped; like a horse's hoof.

*Urceolate*, pitcher-shaped; swelling in the middle like a pitcher.

See *infundibuliform*, *cyathiform*.

*Utriculus*, a little bag, or hollow vesicle.

## V.

*Vagina*, every part, the office of which is to cover, defend, or support the tongue—it is divided into *tubus*, *valvæ*, *palpi*, *lora*, and *annulus*, (Kirby); the bivalve *coriaceous* sheath or cover of the *spicula*.

*Vaginate*, (aculeus) inclosed in a bivalve sheath.

*Valvæ*, or *valvulæ*, in the Hymenoptera, are two coriaceous laminae or sheaths which surround and inclose the *vagina*, and which support the exterior palpi; small concave membranes inclosing the proboscis; the *maxillæ*.

*Variety*, a peculiarity of color or form in an individual, not proper to the species; this difference is sometimes inherited by several successive generations.

*Variolous*, with large, unequal, impressed points.

*Veins*, (venæ). See *nervures*.

*Velum*, membranaceous appendages attached to the *spinula* at the apex of the anterior tibiæ.

*Venter*, the inferior portion of the abdomen, separated from the *tergum* by lateral sutures, and divided into segments.

*Ventricose*, distended; bellying; inflated.

*Vernantia*, vernatio; moulting, the shedding of the skin or *exuvia*.

*Verrucose*, having little hard lumps or wart-like elevations upon the surface. See *pupillous*, *apiculate*.

*Versatile*, vane-like; turning about like a vane.

*Vertebral*, of or belonging to the vertebra; generally used to indicate spots, lines or a different shading of color, &c., immediately over the part corresponding with the vertebral column in a vertebrate animal.

*Vertex*, that part of the face which lies between the *occiput*, *eyes* and *front*; (Diptera) the superior portion of the *front*.

*Vertical*, perpendicular; at right angles with the horizon. See *erect*.

*Verticillate*, placed in *whirls*.

*Vesicular*, beset with prominences that are internally concave, or with little bladders.

*Vibratile*, this term is used to express the almost continual movement of the antennæ of some Ichneumons and Mutillæ; and of the wings of some Diptera.

*Vibrissæ*, curved bristles or hairs in some Diptera situated between the *mystax* and the antennæ.

*Villi*, soft hairs.

*Villous*, soft haired; clothed with long, soft hair. See *hirsute*, *pubescent*.

*Violaceous*, violet color; a mixture of blue and red.

*Viscid*, covered with a resinous or greasy matter. See *glutinous*.

*Vitellinus*, yellow, with a slight tinge of red.

*Vitta*, a longitudinal colored line.

#### W.

*Whirls*, or *whorls*, generally on the antennæ, consisting of small hairs placed round the joints, like spokes round the cave of a wheel. See *verticillate*.

*Wing-cells*, the *areæ*.

*Winglets*, small concavo-convex scales generally fringed at tip, placed under the base of the elytra in *Dytiscus marginalis*.



[From the Western Quarterly Reporter, Vol. II. No. 1, for January, February, and March, 1823, p. 71-82.]

## ARTICLE IX.

### NATURAL HISTORY.

#### A Description of some new species of Hymenopterous Insects.\*

BY THOMAS SAY,

Professor of Natural History in the University of Pennsylvania, and of Zoology to the Philadelphia Museum.

The following descriptions of insects belonging to the order *Hymenoptera*, of Linné, have been made out from specimens collected by myself whilst engaged as a member of Major Long's exploring party under the orders of the Secretary of War, J. C. Calhoun, in traversing the region of country which extends from the river Mississippi to the base of the Rocky Mountains. These insects constitute about one-third of the whole number of new *Hymenoptera* discovered during the expedition: the remainder will be the subject of a future essay.

\* The name of this class of insects is derived from two Greek words *μῆνις-εν*, membrane, and *πτερυξ*, wing. The insects belonging to it have most commonly four naked wings, with longitudinal nervures, the inferior of which are shorter and straighter than the superior, to which they are attached. They have six feet, a mouth furnished with distinct mandibles, with jaws and a lip which by their union form a trunk or sucker, which is called tongue. The female most frequently has the abdomen terminated with a little needle or awl. The wasp and bee are familiar instances of the general characters belonging to this class of insects. The service rendered by these, which like the wasp prey on inferior insects, is scarcely less acceptable than that performed by the bee in the collection of honey for our use. The manners of this class are very interesting throughout, whether we consider them engaged in the construction of receptacles for their progeny, or selecting with great apparent forethought and much labor, the food which is destined for their subsistence.—Ed. W. Q. R.

## ALLANTUS Jurine.

1. A. VENTRALIS.—Black ; feet before and abdomen beneath white.

Inhabits Arkansa.

[72]

Body black ; nasus, labrum, mouth, abbreviated line above the eye, and large spot beneath it, white ; thorax with a line before the wing, small spot each side on the scutel, white ; wings a little dusky : feet white before ; pectus with a white line on each side, and somewhat testaceous central spot ; tergum immaculate ; venter white.

Length nine-twentieths of an inch.

2. A. BIFASCIATUS.—Black ; tergum with a white band at base, and a rufous one in the middle.

Inhabits Arkansa.

Body black ; nasus white ; labrum and palpi dull whitish : thorax with a yellowish line before each wing ; scutel yellowish ; wings dusky ; nervures brown ; feet white ; tips of the posterior thighs and their tibiæ, black ; tergum with a white band at base and a rufous one on the middle.

Length seven-twentieths of an inch. (♀)

For this handsome species I am indebted to Mr. Thomas Nuttall.

3. A. EXTERNUS.—Black : tibia white on the exterior side.

Inhabits Missouri.

gum, with the lateral basal margin of the segments, rufous; venter rufo-testaceous each side, dusky in the middle.

Length seven-twentieths of an inch.

#### DOLERUS Jurine.

**D. COLLARIS.**—Black; thorax, rufous before.

Inhabits Missouri.

Body entirely black; with the exception of a yellowish-rufous [73] anterior thoracic, triangle, and anterior segment or collar of the same color, which descends on each side.

Length to the tip of the wings nine-twentieths of an inch.

#### TREMEX Jurine.

1. **T. SERICEUS.** [Ante, p. 73.]

2. **T. OBSOLETUS.** [Ante, p. 74.]

#### ANOMALON Jurine.

**A. FLAVICORNIS.**—Black; antennæ yellow; wings blackish; abdomen very much compressed.

Inhabits Arkansa.

Mouth piceous; thorax with two approximate dilated grooves confluent behind; scutellum united to the thorax by a carinated line each side; tip of the superior wings, and tip of the interior margin of the inferior wings, broadly margined with blackish: abdomen dilated towards the tip, broad, very much compressed; first segment sub-cylindric, nearly as long as the second and third segments taken together, and geniculate at its union with the second segment.

Length more than one inch.

I obtained an individual specimen near the Rocky Mountains.

#### MUTILLA of Authors.

[74]

**M. QUADRIGUTTATA.**—First segment of the tergum with four yellow dots.

Inhabits near the Rocky Mountains.

Body ferruginous, with confluent punctures; antennæ and mandibles black at tip; tergum black, first segment with four yellow dots placed nearly equidistant two and two, the anterior

pair smaller; posterior segments and tips of the first segment with yellowish sericeous hair.

Length more than half an inch.

SCOLIA Latreille, Jurine.

1. S. 8-MACULATA. [Ante, p. 68.]
2. S. TRICINCTA. [Ante, p. 69.]
3. S. CONFLUENTA. [Ante, p. 68.]

PLESIA Jurine.

[75]

P. MARGINATA.—Yellow; abdominal segments margined behind with black; beneath black.

Body yellow; head black, varied with yellow; collar with the anterior declivity black; thorax black; squammula and large central spots yellow; two spots on the scutel yellow; metathorax and a large spot on the pleura pale rufous; feet black: a whitish spot near the tip of the posterior face of the tibia, and another upon the anterior face of the anterior pair; tergum with the posterior margin of the segments black; anal segments black: venter with three triangular yellow spots on each side.

Length less than three-fifths of an inch.

This species agrees in character with the genus *Plesia* of Jurine, but it differs from *Mizine* of Latreille, by having the mandibles entirely destitute of teeth, a character which it possesses in common with *Meria* Illiger, but the form of its wing cells will not admit of its being referred to the latter genus.

of the wings; feet yellow, black at base; wings tinged with ferruginous; abdomen segments with yellow posterior margins interrupted on the middle of the venter, the anterior one not extending beneath; anterior segment abruptly rather smaller than the second one; aculeus naked, exerted, inflexible, recurved.

My specimens are males. It inhabits Missouri as well as Pennsylvania, and is not uncommon. Probably it is allied to *Elis sexcincta* Fab.

POMPILUS Fabr., Latr., Jur.

P. FORMOSUS. [Ante, p. 91.]

AMPULEX Jur.

A. CANALICULATA.—Black; superior wings with a blackish band; antennae and feet piceous.

Inhabits Missouri.

Mandibles at tip and labrum rufous; front with a carina above each of the antennae and another in the middle which descends upon the hypostoma; collar densely punctured and grooved in the middle; thorax sparsely punctured and with two distant longitudinal impressed lines; metathorax with eight dilated grooves, in which are numerous transverse elevated lines; wings brownish, superiores with a blackish band and black stigma; abdomen polished immaculate.

Length nearly two-fifths of an inch.

These insects have a singular appearance in consequence of their elongated collar and metathorax. The species resembles *Fasciatus* Jur., but differs in the number of grooves on the metathorax.

STIZUS Latr., Jur.

[77]

S. GRANDIS. [Ante, page 3.]

S. UNICINCTUS. [Ante, p. 4.]

LARRA Fabr., Latr.

L. ABDOMINALIS.—Black; thorax with cinereous down; abdomen first, second and third segments, rufous; feet black.

Inhabits Arkansas.

black; front argenteous; thorax with cinereous down;

feet black, with argenteous hair; abdomen, first, second and third segments, bright rufous; on the tergum each with a lateral oblong sericeous lunule; terminal segments black, of which the fourth one has a lateral sericeous lunule; anal segment with a rufous reflection above.

Length of one specimen eleven twentieths, of another seven tenths of an inch

With the exception of the tibia, this species, in point of color resembles *L. tricolor* F., but differs from it in form, the abdomen in this respect being more closely allied to that of *L. subsericans furvus* [20]

2 *L. YABATA* Black, abdomen rufous, tarsi rufous

Inhabits Arkansas

Body black, abdomen entirely rufous, drawing on sanguineous, tarsi, with the exception of the first and second ones, rufous wings hyaline

Length two fifths of an inch

#### ANTATA Latr

*A. bicolor* Black; abdomen bright rufous, dusky at tip

Inhabits Arkansas

Head, minutely punctured, mandibles, pectus at top, entire row of sternites of the male, very large, thorax minutely punctured wings hyaline, nervures blackish, stigma pale rufous, abdomen rufous sanguineous, the male black at tip, scutell on the dark on

about five, the superior ones largest, the intermediate one of the inferior series obtuse, sometimes obsolete; tibia, anterior pairs white before; anterior tarsi with elongated setæ before, (as in many species of *Gorytes*;) abdomen with the posterior margins of the segments glaucous, above somewhat iridescent.

Length less than two-fifths of an inch.

#### CRABRO Fabricius, Latreille.

**C. 10-MACULATUS.**—Black; tergum with five yellow spots each side.

Inhabits Missouri.

Hypostoma and front with silvery hair; antennæ black; scapus and first joint of the flagellum, yellow; thorax punctured; collar yellow, uninterrupted; scutel and base of the metathorax [79] with each a transverse yellow line; pectus with two yellow spots of which the posterior one is transverse; wings brown; feet yellow; thighs rufous, blackish at base; spots of the tergum large and distinct, the posterior one approaching more closely on the back; beneath immaculate.

Length three-fifths of an inch.

Large and having one spot more on each side than *C. maculatus* Fab.

#### PHILANTHUS Fabricius, Latreille.

1. **P. CANALICULATUS.** [Ante, page 111.] [80]

2. **P. ZONATUS.** [Ante, page 111.]

Like many species of this genus, the *Zonatus* is subject to vary in its tints and proportions of coloring. I have a fragment of a specimen which has two yellow lines on the scutel, a yellow V, on each side of which is a large yellow spot. Sufficiently distinct from *P. vertilabris* L. by the form of the wing cells.

#### CERCERIS Latreille.

1. **C. FRONTATA.**—Nasus elevated; body pale rufous; tergum yellow with rufous incisures.

Inhabits Arkansas.

Body pale rufous; antennæ and mandibles black at tip; front pale yellow; nasus elevated at tip from the clypeus, widely emar-

ginated and densely ciliated on the anterior edge, lobes acute; clypeus four toothed at tip; wings dusky blackish on the posterior margin; wing scale and double line on the costal yellow. tergum yellow; incisure reddish brown

Length of the body nine tenths of an inch.

The specimen is a female, remarkable by the prominence of the nasal portion of the face, a character which was also pointed out by Latreille, in a species which he called *Ceryrus curvus*, which must be observed to nourish its young, with insects of the *Leucan* genus *Curculio*.

2 *C. BIDENTATA* Lateral lobes of the clypeus each elevated into a prominent spine: anterior margin of the superior wing dusky

Inhabits Arkansas

Body pale yellowish; head behind the eyes and above, and base of the antennae, rufous, antennae black at tip, front convex lateral lobes of the clypeus each with a cone prominent perpendicular to the surface, mandibles black at tip, thorax rufous on the principal segment, superior wings blackish on the anterior margin, the costal nervure tinged with yellowish to the middle, tergum incisure reddish brown, segments each with a transverse groove on the middle

Length less than three fifths of an inch

In general color, very much resembles the preceding species from which it may be distinguished by its much smaller size. 1833



The third band of the back of the abdomen is sometimes so near the preceding band as to appear like a dilation of it.

**EPEOLUS** Latr., Fabr., Jur.

**E. 4-FASCIATUS.**—Black; abdomen quadrifasciate, terminal segment tripunctured.

Inhabits Arkansa.

Body deep opaque black; three basal joints of the antennæ, clypeus and labrum, rufous; front around the base of the antennæ, yellow; thorax with an anterior and posterior yellow line, the latter so arquated as nearly to attain the former; a broader line beneath the wings; beneath the scutel a whitish band and two oblique lanceolate spots; tergum, 4-banded with yellow, first band very broad, interrupted by a line which is very slightly dilated in the middle; remaining bands narrower, submarginal, entire; terminal segment with an oblique yellow lateral spot; feet rufous.

Length three-fifths of an inch.

On flowers near the Rocky mountains. It is much larger than *E. mercatus* F.

**MEGACHILE** Latreille.

**M. LATIMANUS.**—Anterior tarsi dilated and with incurved ciliæ on the inner side; first joint of the intermediate tarsi one-toothed. (♂)

Inhabits Arkansa.

Body black; covered with greenish cinereous hair; hair of the front whitish; antennæ filiform, glabrous; labrum near the [82] tip, concave, glabrous, polished, tip slightly ciliated; mandibles tridentate on the oblique tip (in the male) and rufous near the tip, on the exterior side; anterior feet much dilated and with whitish hair, dull rufous; knees black; the tarsi dilated and with dense, elongated, incurved ciliæ: intermediate thighs ventricose beneath; tibiæ arquated; tarsi dilated, densely hairy on the inner face, less dilated than the intermediate ones; abdomen, with the posterior edges of the segments densely ciliated; anus with a deep sinus (in the male.)

Length nearly three-fifths of an inch.

In the much dilated appearance of the anterior tarsi, this species is allied to the *Apis lagopola* of Linnæus, and its proximate species.

[From the Western Quarterly Reporter, vol. ii. No. 11, for April, May, and June, 1823, p. 160—165.

Description of Insects belonging to the order **NEUROPTERA** Lin., Latr. Collected by the Expedition authorized by J. C. Calhoun, Secretary of War, under the command of Major S. H. Long.

BY THOMAS SAY,

Professor of Natural History in the University of Pennsylvania, and of Zoology to the Philadelphia Museum.

#### ARTICLE IV.

#### NATURAL HISTORY.

#### Genus **PHRYGANEA** L. Latr.

1. **P. VIRIDIVENTRIS**.—Body pale brownish ; abdomen bright green ; feet whitish.

Inhabits the Ohio river.

Body pale brownish, somewhat hairy, hairs cinereous ; head white beneath ; eyes prominent, chestnut-brown ; antennæ rather longer than the body, light brown, whitish at base ; pectus white ; feet white ; tarsi of the intermediate pair of feet, dilated ; superior wings ciliated, dusky or blackish, beyond the middle a few whitish spots somewhat arranged in two bands ; inferior wings dusky, immaculate ; abdomen bright green.

Length to the tips of the wings three-twentieths of an inch.

Length of the antennæ one sixth of an inch.

Length to the tip of the wings one-half inch; of the body three-tenths of an inch; of the superior wings nine-twentieths of an inch; of the antennæ three-tenths of an inch.

This species appears in vast numbers early in May on the river Ohio. From the 7th to the 9th of that month, when descending the river, I observed them near each shore, flying [161] in opposition to the direction of the wind, and so extremely numerous that, having a white appearance when flying, they might be compared to flakes of snow, in a moderate fall of that meteor. They were most numerous on the 7th, and appeared to decrease in number daily.

3. *P. LATERALIS*.—Body blackish; wings white; superior wings spotted with brown; eyes dark reddish-brown; feet white.

Inhabits Shippingport.

Body blackish with cinereous hairs above, and shaded with plumbeous beneath; eyes prominent, dark reddish-brown; antennæ and mouth pale; thorax black, with cinereous hairs; pectus black, slightly cinereous or plumbeous; feet whitish; wings white; superiores slightly spotted with brown, a common spot on the middle of the inner margin, and several nearer the tip, somewhat arranged into a band, the costal one of which is larger; inferiores white immaculate; abdomen blackish, pale vitta each side, and a pale posterior margin to the segments; caudal appendages white.

Length to the tip of the wings two-tenths of an inch; of the body two-tenths of an inch; of the antennæ three-tenths of an inch.

This species appears in very great numbers on the banks of the Ohio, near Shippingport, on the 21st of May. Judging from the small space of about half a mile on the Indiana side of the river, where I had an opportunity to see them, their numbers could be little inferior to that of *P. numerosa*, which occurred a few days before, but of which a specimen was now rarely seen.

4 *P. SEMIFASCIATA*. [Ante, p. 97.]

Genus BAETIS Leach.

[162]

1 *B. FEMORATA*.—Wings whitish; nervures deep brown, and margined with brown; inferior wings subovate, hardly half as long as the superior ones.

Length of body half an inch nearly.

*Male.* Body brown; abdomen beneath whitish; eyes large, prominent, approximate, separated above only by a fissure; thighs banded with reddish-brown near the middle, and at tip; wings snowy white: nervures brown, and margined with brown, more particularly so at the base, middle and tip of their costal margins; caudal setæ hardly twice the length of the body.

*Female.* Body brown; scutel yellowish, distinct; venter whitish; eyes distant; front prominently carinated: wings whitish; nervures brown, equally margined with brown; inferior wings less than half as long as the superior; feet pale brown, a reddish-brown band and tip to the thighs; caudal setæ hardly as long as those of the male.

Caught at Cincinnati, Ohio, and did not appear in any considerable numbers.

#### Genus CLOEON Leach.

*C. PŌSTICATA.*—Abdomen pale green, behind brown; thorax black opaque; wings white.

Inhabits Shippingport.

Eyes apparently four, approximate; superior ones elevated, subpedunculated; cornea subdiscoidal, slightly convex, edge tinged with yellow; inferior ones smaller, not elevated, longitudinally oval, dark reddish-brown; thorax deep black opaque: wings pure white, immaculate, inferior ones very small; feet pure white, anterior pair slightly dusky at base; scutel elevated; abdomen pale bluish-green, hyaline, three terminal joints deep brown opaque above; seta two, long, pure white.

Length of the body three-tenths of an inch; of the setæ seven-tenths of an inch.

[163]

all and delicate species. Considerable numbers of them  
May 21st, while at Shippingport. The  
colors of this insect is  
is so

*Male.* Body black; front carinated; eyes small, remote; thorax black, with a cinereous tinge, a longitudinal dorsal broad black vitta, and a lateral impressed line; wings dusky, inferiores pale, with a dusky tip; feet pale brownish; tarsi black; anterior feet blackish; abdomen black, incisure beneath pale; setæ rather longer than the body.

*Female* resembles the male, but the eyes are larger, contiguous, and brown, with each a smaller, longitudinal, black one on the inferior orbit; abdomen black; segments above and beneath pale at the posterior edge, a dorsal obsolete white line, and on each two divergent, abbreviated, obsolete, whitish lines, originating at the base of the segment and terminating near the middle of its length; setæ longer than the body.

Length of the body of male seven-twentieths, female nine-twentieths of an inch; of the setæ of male two-fifths, female four-twentieths of an inch.

This species is rather numerous on the Ohio, in the neighborhood of Cincinnati, the 15th of May.

#### Genus MYRMELEON Linn., Latr.

*M. ABDOMINALIS.*—Pale testaceous, varied with black; abdomen very long.

Inhabits Arkansas.

Head and thorax pale testaceous, densely spotted and lined with black; antennæ clavate, blackish, the segments tipped with testaceous; nervures varied with black and white; feet whitish, spotted with black; abdomen hairy, very much elongated, pale testaceous, with longitudinal black lineations, posterior half blackish.

Length one and one-half inches; of the superior wings one inch.

This we obtained near the Rocky Mountains. The abdomen of the female is not longer than the wings, and the latter have a distinct white spot near the tip on the costal margin.

#### Genus BITTACUS Latr.

[164]

*B. STIGMATERUS.*—Body yellowish; abdomen falcate, wings with an opaque carpal spot.

Inhabits Missouri.

Body pale yellowish ; stemmata large, frontal, placed triangularly, two superior ones dusky ; front with a blackish area between the stemmata ; maxillary palpi blackish ; eyes prominent oval ; thorax between the origin of the of the superior wings, with two convex, longitudinally oval elevations ; wings nearly equal, pale yellowish, a subopake carpal spot near the tip of each ; abdomen falcate.

Length to tip of wings three-fourths of an inch.

Found near Fort Osage on the Missouri.

Genus SIALIS Latr. [PERLA Geoffr.—SAY, MS. correction.]

1. *S. DORSATA*.—Body black, varied with rufous ; labrum pale ; thorax with a dorsal rufous vitta and anterior and posterior rufous incisures.

Inhabits the Ohio river.

Head blackish, with about six blacker spots ; labrum pale, beneath pale yellowish ; palpi black ; thorax blackish, with impressed blacker lines, anterior and posterior incisures and dorsal vitta rufous ; angles rather prominent ; a pale obsolete line from the base of the thorax to the abdomen ; beneath yellowish, disk of the segments black ; trochanters yellowish ; wing nerves deep black ; abdomen black, segments above with yellow posterior margins ; venter pale yellow.

Length to the tip of the wings one and three-fourths of an inch.

Numerous in May near Pittsburgh.

2. *S. IMMARGINATA*.—Body black varied with yellow, or yellow varied with black ; wings dusky ; nervures brown immarginate ; thorax transversely quadrate, posterior angles somewhat  
 disk somewhat rugose with impressed irregular lines, an  
 lightly arched

rafous; head with a black band before the eyes which include an undulated white line.

This species differs much in the distribution of its colors; it is generally entirely yellowish beneath, and sometimes also on the tergum; the thorax also has sometimes a yellow dorsal line, and sometimes a black one. It appears in considerable numbers towards the end of May.

3. *S. IMBECILLA*. Body pale green; wings white.

Inhabits the Ohio river.

Body pale green, immaculate; eyes prominent, chestnut-brown, stemmata chestnut-brown, placed triangular, equidistant; antennæ dusky, hairy; wing greenish white, immaculate; thorax transversely oval, sculptured.

Length to the tip of the wings seven-twentieths of an inch; of the body about one-fifth of an inch; of the antennæ three-twentieths of an inch.

Occurs in considerable numbers on the river Ohio, about the middle of May. I observed it at Cincinnati.

4. *S. BILINEATA*.—Body pale greenish yellow; thorax bilineate; head with a black double converging line; eyes reddish-brown.

Inhabits the Ohio river.

Body pale greenish-yellow; head a double black frontal line, including the stemmata behind, converging and confluent before, and truncate at the anterior stemmata; an obscure triangular spot on the clypeus; eyes deep chestnut-brown; antennæ dusky, pale at base; thorax with two equal, dilated, parallel, blackish vittæ; scutel bimaculate, spots blackish, placed transversely; wings white, nervures blackish; tergum black.

Length of the body and wings, from two-fifths to one-half of an inch.

Found near Cincinnati, and occurs not unfrequently about the 15th of May. The obscure spot on the anterior portion of the head is sometimes wanting.

(From Narrative of an Expedition to the source of St. Peter's river, &c., under the command of Stephen H. Long, Major U. S. T. E., Vol. 2; Philadelphia, 1824, pp. 268—378.)

### ORDER COLEOPTERA.

#### CICINDELA Linn. Latr.

*C. LONGILABRIS*.—Blackish; elytra spotted and banded with white; labrum long.

Inhabits North-west Territory.

Head and thorax slightly tinged with greenish; antennæ, [269] basal joints, blue-black; labrum white, nearly as long as broad, obtusely longitudinally carinated, obscurely tridentate at tip, and a little dilated at the lateral base; mandibles white on the exterior edge near the base: palpi dark blue, or cupreous; elytra with rather large, dense punctures; a humeral spot, another before the middle on the margin, a reclivate, nearly transverse band on the middle, and a spot at the posterior curve of the elytra, white; venter black, with a purplish reflection.

Length less than three-fifths of an inch.

Var. *a*. The spots of the elytra obsolete.

This insect seems to approach nearest to *C. vulgaris* nob. (Trans. Amer. Philos. Soc. vol. 1. new series,) but it is sufficiently dis-



minute punctures, which are oblique, as if formed by a pointed instrument directed towards the anterior part of the insect, so that the surface before each puncture is a little elevated; a white line margins the extremity; venter blackish-testaceous; tibia dull testaceous.

Length rather more than two-fifths of an inch.

This species is closely allied to *C. pusilla* nob. but the marking of the elytra differs, and the thorax is not so much [270] contracted at base and is more closely affixed to the abdomen.

#### POECILUS Bonelli.

*P. FRATERNUS*.—Dark green; elytra dark greenish-cupreous; palpi and feet piceous-black.

Inhabits North-west Territory.

Antennæ fuscous; three basal joints yellowish, and carinated, carina dusky; thorax slightly margined; dorsal impressed line extending entirely to the basal edge; lateral edge regularly arcuated; basal angles slightly more than right angles; elytra dark coppery, with a dark green exterior margin; striæ impunctured; interstitial spaces a little rounded; beneath piceous-black.

Length two-fifths of an inch.

Although the thorax of this insect is not broadly margined, yet the margin is much wider than that of the *chalcites* Hellwig, (in Melsh. Catal.) and it may be distinguished from the *lucublandus* Knoch, (in the same work,) by the color of the palpi, &c.

[I consider this as a variety of *P. lucublandus*.—LEC.]

#### DYTISCUS Linn. Latr.

*D. FASCIVENTRIS*.—♀ Dark olivaceous-brown; thorax and exterior elytral margin margined with yellow.

Inhabits Lake Superior.

Head darker than the elytra, greenish-back, with a rufous transverse frontal spot; antennæ rufous, joints dusky at their tips; labrum and nasus yellowish; palpi color of the antennæ; thorax color of the head, margined all around with yellowish; a longitudinal impressed line, and extremely minute scattered punctures; scutel [271] yellowish; elytra each with ten grooves extending nearly two-thirds the whole length from near the base; exterior margin yellowish, becoming obsolete at tip; an obsolete spot towards

the extremity resembling the commencement of a branch from the color of the margin; feet pale rufous; postpectus black, yellowish each side behind and at the anterior angles; venter black, with yellow bands, terminating each side in triangles of the same color.

Length one and one-tenth of an inch.

This species is most closely allied to *D. marginalis* of Europe; the appearance of the superior surface of the body is altogether the same, even to the form and appearance of the frontal spot, nevertheless our insect is much smaller, and the arrangement of colors beneath, on the postpectus and venter, is altogether different.

[Afterwards described as *D. carolinus* Aubé, Hydr. 108.—Lac.]

#### LACCOPHILUS Leach.

**L. PUNCTATUS.**—Dusky testaceous; very regularly and profoundly punctured.

Inhabits North-west Territory.

Body-suboval, short, dull testaceous; head with two dilated slightly impressed spaces on the front; clypeus obtusely rounded at tip; punctures numerous, rather sparse on the vertex; thorax blackish on the anterior and posterior margins; punctures subequidistant; elytra darker than the head and thorax, very regularly and beautifully punctured; punctures rather larger than those of the thorax, subequidistant; beneath, excepting the feet, also punctured.

Length more than one-tenth of an inch.

tured, but with a glabrous dorsal line and one or two lateral glabrous spots; elytra violaceous, with cupreous reflections; base violaceous, punctured-striate; tip with a small tooth at the sutural angle, and about four very minute teeth; beneath cupreous, polished; venter with a series of three yellow quadrate spots on each side, and a large oblique oval one on the anal segment approaching at the middle of the segment and extending by a branch for a short distance on the edge.

Length thirteen-twentieths of an inch.

This is a very pretty insect, readily distinguished by the subocular, thoracic, and ventral spots.

[A species of *Ancylochira*, afterwards described as *B. sexnotata* Lap. and Gory, Mon. Buprest. 2, 129, tab. 32, fig. 178.—LEC.]

#### SCYDMÆNUS Latr.

**S. CLAVIPES.**—Blackish; elytra bright rufous, blackish at tip; antennæ longer than the thorax.

Inhabits Pennsylvania.

Body hairy; head piceous; antennæ rather longer than the thorax and with the palpi, dull rufous; thorax blackish with an impressed transverse line at base and the appearance of a longitudinal one before; hairs numerous; elytra smooth, polished, impunctured, and without striæ; bright rufous; hairs long; humeral angles longitudinally elevated; [273] a slight groove at the base of each elytrum, tip black; feet rufous; thighs clavate; venter dull rufous.

Length more than one-twentieth of an inch.

**S. BREVICORNIS.**—Blackish; elytra bright rufous, blackish at tip; antennæ shorter than the thorax.

Inhabits Pennsylvania.

Body hairy; head black; antennæ rather shorter than the thorax, hairy, dull rufous; thorax polished, black; elytra smooth, polished, impunctured, and without striæ, bright rufous; hairs long; humeral angles longitudinally elevated; a slight groove at the base of each elytrum, tip black; feet rufous; thighs clavate, dusky at tip.

Length rather more than one-twentieth of an inch.

Strongly resembles the preceding, but the antennæ are much

half; on this half the punctures are larger and the striæ more deeply impressed than on the exterior half where the surface has a minutely granulated appearance; tip acute; feet blackish-piceous; tarsi piceous; anterior tibia with a line of dense yellowish hairs before.

Length one-fourth of an inch.

[Belongs to *Helichus* Er.—LEC.]

#### HYDROPHILUS Fabr.

1. *H. CINCTUS*.—Black, surrounded with a yellowish margin. Inhabits United States.

*H. cinctus* Knoch, in Melsh. Catal.

Body black, polished, with numerous, minute, regular punctures; head with a large, triangular, yellowish spot before the eye; palpi yellowish; antennæ fuscous; thorax margined with yellowish; this color is sometimes obsolete on the anterior margin, and generally obsolete on the posterior margin; elytra without any appearance of striæ; the exterior margin, from the humerus to the suture, yellowish; beneath blackish-piceous; tarsi dull yellowish.

Length more than one-fifth of an inch.

We obtained specimens on Red River of Lake Winnepeek; it is also found in Pennsylvania.

[Belongs to *Philhydrus* Sol.—LEC.]

2. *H. GLOBOSUS*.—Very convex, oval; elytra with striæ of punctures.

This species is oval, not elongated, and is more convex than any other species of this country yet discovered.

[This is a species of *Hydrobius* Leach.—LEC.]

3. *H. NEBULOSUS*.—Pale whitish-testaceous; a subsutural line on the elytra obsolete before the middle.

Inhabits United States.

*H. nebulosus* Melsh. }  
*H. labiatus* Knoch. } Melsh. Catal.

Body very finely but irregularly punctured; punctures sometimes obsolete; head black or varied with black; thorax, angles rounded; elytra with a subsutural impressed line which disappears before the middle, and is more deeply impressed behind; beneath, excepting the feet, blackish.

Length less than three-twentieths of an inch.

I obtained a specimen in the Lake of the Woods.

[Belongs to *Philhydrus*.—LEC.]

#### APHODIUS Illig. Fabr.

1. *A. HAMATUS*.—Thorax impunctured on the disk; claw of the anterior tibia dilated, incurved.

Inhabits North-west Territory.

Body dark piceous; clypeus minutely punctured; margin reflected, particularly at tip; tip truncated, subemarginate; thorax punctured each side and at base; large, equalling at least two-thirds the length of the elytra; elytra [278] paler than the head and thorax; striate; striæ punctured; feet rufous; the claw at the tip of the anterior tibia is dilated and curved inwards like a hook.

Length less than one-fourth of an inch.

An insect remarkable for its short robust stature and the proportional length of its thorax, as well as for the dilatation and and crooked form of the appendages at the extremity of the tibia.

2. *A. CLYPEATUS*. Black; elytra testaceous; clypeus, covered with small tubercles.

Inhabits North-West Territory.

Head black, convex, covered with very small obtuse tubercles; edge a little elevated, piceous; tip hardly truncated; thorax with irregular small obtuse rugæ; anterior angles rectangular; posterior edge regularly arcuated, not dilated in the middle; elytra rufo-testaceous, dusky at base; with deep, punctured striæ;

interstitial lines convex; thighs dull-yellowish; posterior ones much dilated.

Length more than three-twentieths of an inch.

Readily distinguished by the rough appearance of the clypeus.

[Probably an *Aegialia*.—LEO.]

#### TROX Fabr.

T. CANALICULATUS.—Thorax with entire groove; clypeal edge not reflected; elytra with alternate series of large and small elevated bristly dots.

Inhabits North-west Territory.

Body blackish-brown; head with numerous irregular discoidal punctures; clypeus obtusely rounded at tip; the edge not reflected; surface flat, excepting two little elevated protuberances on the upper part of the front; antennæ yellow; thorax with a strongly impressed obvious [279] definite groove, the bounding lines of which are uninterrupted, and are equally elevated in every part; an obtuse slightly elevated line passes across the groove near its middle; between the elevated line of the groove and the lateral edge is a slightly elevated very obtuse space; basal edge sinuated, over the scutel obtusely rounded; basal angles extended a little backwards and rounded at tip; elytra with four elevated lines on which are oval fascicles of yellowish short bristles; interstitial spaces each with a series of small rounded points, also furnished with bristles.

Length seven-twentieths of an inch.

It is about equal in size to the *T. canaliculatus*, but is also

coated, and vertically rounded, with a slightly impressed line bordered by a slightly elevated one, both so small as not to be visible to the eye: elytra irregularly reticulated with elevated lines; the intervening spaces with slightly elevated centres; thighs clavate; anterior and intermediate tibiæ a little curved; tarsi beneath, and inferior portion of the tip of the tibia with yellowish hair. [280]

Length nearly seven-tenths of an inch.

This species is very distinct from any other that I have seen and very readily recognized.

[Identical with the European *Upis reticulata*; and very abundant throughout Canada, in Maine and at Lake Superior.—LEC.]

#### PHALERIA Latr.

1. *P. TESTACEA*.—Pale testaceous, beneath black; thorax impunctured; elytra striate, and with a blackish spot on each near the tip.

Inhabits United States.

Body oblong-oval, polished; head hardly perceptibly punctured; a transverse indented line before the eyes; antennæ sensibly dilated towards the tip; joints, from the sixth to the tenth inclusive, transverse, hemispheric-compressed, perfoliate; eleventh nearly globose; thorax transverse-quadrate, impunctured, rather wider behind; an impressed puncture each side on the basal margin, anterior angles rounded; scutel blackish; elytra striated, striae slightly punctured, more deeply impressed behind, abbreviated at the humeral angle; a blackish-brown spot on each near the tip; tergum blackish; beneath black; feet pale testaceous; anterior tibia serrate with short spines, tip rather abruptly dilated, forming almost a lobe on the exterior side; intermediate and posterior pairs spinulose-serrated, gradually dilating towards the tip.

Length more than one-fourth of an inch.

This insect is not uncommon. It occurs in Pennsylvania, and under dead marine animals on the sea-beach, from New Jersey to Florida.

2. *P. PICIPES*.—Black; antennæ, mouth and feet piceous.

Inhabits the Southern States.

Head destitute of an impressed line before the eyes; antennæ

and thorax formed as in the preceding species [281] excepting that the anterior angles of the thorax are subacute; striæ of the elytra as in the preceding; feet as in the preceding, excepting that the anterior tibiæ are gradually very much dilated at tip, and not somewhat abruptly dilated near the tip, the line of the exterior edge is therefore nearly rectilinear.

Length from one-fifth to less than one-fourth of an inch.

Var. *a.* thorax dull piceous.

Var. *β.* entirely piceous.

#### EPITRAGUS Latr.

*E. CANALICULATUS.*—Thorax with two lines and lateral edge elevated.

Inhabits United States.

♂. Body blackish-brown, more or less bronzed, with very numerous short cinereous hairs; thorax broader behind, somewhat lobed at the scutel; angles produced, very acute; lateral edge rectilinear, elevated; anterior edge abruptly undulated; disk with two elevated lines which become obsolete behind and originate each in a flattened and porrect tubercle on the anterior edge; elytra with dilated, slightly impressed grooves.

Length nine-twentieths of an inch.

Var. *a.* grooves of the elytra obsolete.

The female is very different in appearance from the male, by being entirely destitute of the elevated lines and edges of the thorax, and of the undulated form of the anterior edge of the thorax. The elevated lines and lateral edge give the thorax the



waved band near the base, extending to the base at the outer margin, and widely interrupted at the suture; another rufous band behind the middle, slightly undulated, and hardly interrupted by the suture; sutural edge a little elevated behind; venter very distinctly sericeous with yellowish hair.

Length more than one-fifth of an inch.

I obtained a specimen many years ago near Philadelphia, and we lately captured another in the North-Western Territory.

#### DIRCEA Fabr.

**D. TIBIALIS.**—Black, with short hair; base of the antennæ and tibia yellowish.

Inhabits North-West Territory.

Body oval-orbicular, with very short hair, and irregularly and very minutely punctured; antennæ, three basal joints obscurely pale rufous; clypeus a little dilated before the antennæ and truncated; palpi dusky rufous; terminal joint rather abruptly conic-acute; thorax convex, short, wide; lateral edge arcuated; angles rounded; scutel rather large, triangular; elytra destitute of striæ; tip narrowed [283] and rounded; tibia pale rufous; posterior thighs much dilated, formed for leaping.

Length three-twentieths of an inch.

[This appears to be *Scirtes tibialis* Guerin, Spec. Icon. An. Art. 3.—LEC.]

#### SERROPALPUS Oliv.

**S. 4-MACULATUS.**—Blackish-brown, sericeous; elytra with two yellow spots.

Inhabits Arkansa and Missouri.

Antennæ and labrum dull testaceous; thorax, anterior margin absolutely dull testaceous; scutel minute; elytra narrower behind; a large, very irregular yellow spot before the middle and another behind the middle of each; pectus and postpectus distinctly punctured; anterior tarsi dilated and covered beneath by very dense, short, yellow hair; remaining tarsi slender; venter dark red-brown, paler at tip.

Length nearly seven-twentieths of an inch.

This species appears to be of rare occurrence.

[Belongs to *Dircea*—LEC.]

## HELOPS Fabr. Latr.

1. *H. AROTATUS*.—Dark brassy, irregularly punctured; elytra with dilated indentations.

Inhabits North-west Territory.

Body long, cylindrical, a little depressed; punctures dilated, rather large, profound, approximate, irregularly disposed; antennæ piceous, less than half the length of the body, terminal joint oblong-oval; palpi dark piceous, long labrum, breadth equal to twice the length; a small impressed spot between the eyes; thorax depressed; widest hardly before the middle, from which part the edge is rectilinear to the posterior angles, and very nearly rectilinear to the [284] anterior angles, which are obtusely rounded; posterior angles a little angulated; scutel rounded behind, with short, cinereous, prostrate hairs; elytra not dilated behind; punctures larger than those of the thorax, often confluent; a slightly prominent line between the middle and suture, a depressed one between the middle and lateral margin; several slightly elevated lines near the tip; disk with two series of two or three much dilated alternate indented spaces; tip rounded; beneath blackish with small punctures; feet blackish-piceous.

Length half an inch.

This insect occurred on the shore of St. Peter's river, and on that of Red river of Lake Winnepeek. The larger indentations of the elytra have a fortuitous appearance.

54. *Stenotarsus* [illegible] with the [illegible] [illegible]

been described under different names by several authors; it has the same beautiful variable color upon the elytra, which induced Olivier to call that insect *vittatus*, and Beauvois to give the name of *teniatus*, but it is a small species, the lateral edge of the thorax is a little curved outwards near the posterior angles, whilst that of *micans* is rectilinear in the same part, and the interstitial [285] lines of the elytra are convex, whilst those of *micans* are nearly flat.

CISTELA Fabr. Latr.

1. C. BINOTATA.—Blackish, sericeous; elytra with a humeral rufous spot.

Inhabits North-west Territory.

Body black, polished; in a particular light sericeous both above and beneath with small hairs, which do not, however, at all conceal the punctures; head punctured; palpi and three basal joints of the antennæ rufous-yellow; thorax with equal large dense punctures; very slightly contracted behind, rounded before; posterior angles not prominent; an abbreviated longitudinal impressed line at base, on each side of which is an obsolete dilated impressed lunate space; elytra densely punctured, and with punctured striæ; humeral gibbosity rufous; feet dull rufous, sericeous.

Length nearly three-tenths of an inch.

[Belongs to *Mycetochares* Latr.—LEO.]

2. C. SERICEA.—Pale testaceous, sericeous; striæ of the elytra obsolete.

Inhabits United States.

*C. sericea* Knoch in Melsh. Catal.

Head minutely punctured, transverse impressed line before the antennæ very obvious; thorax semioval, a little truncate before and not undulated behind; posterior angles rectangular; elytra hardly perceptibly darker towards the tip, rather lighter at base; striæ obsolete, excepting two next the suture which are distinct; wings a little dusky, particularly towards the tip; feet somewhat paler than the body.

Length one-fourth of an inch.

[286] A very common species, particularly in July on the *Ceanothus Americanus* and other flowers.

## MELANDRYA Fabr. Latr.

1. *M. STRIATA*.—Black; thorax with three grooves; front with an impressed dot; elytra striate and punctured.

Inhabits the middle and northern States.

*Serropalpus canaliculatus* Melsh. Catal.

Head with numerous minute punctures; a distinct rather longitudinally oval impressed spot between the superior part of the eyes; palpi at tip of the terminal joint, and one or two terminal joints of the antennæ dull rufous; thorax gradually dilating to the base, from the width of the head to that of the elytra; surface minutely punctured with small sparse hairs; three dilated longitudinal grooves, or undulations, obsolete before; lateral edge almost rectilinear to near the posterior angles, where it is a little incurved, it is vertically rounded before the middle, and acute behind the middle; posterior angles nearly right angled; scutellum suborbicular, convex, punctured; elytra, striæ dilated, with numerous punctures, those of the base being more distinct as the striæ are not so profound in that part.

Length three-fifths of an inch.

A specimen of this interesting insect occurred in the Northwest Territory. My friend, the Rev. John F. Melsheimer, with whom I corresponded on the subject of this species, agrees with me perfectly in the propriety of placing it in this genus, and in its being altogether different from the *S. canaliculatus* Illig. *Melandrya canaliculata* Fabr. This conclusion indeed is irresistible, when we compare our insect with the description of that

rounded, convex, punctured; elytra densely punctured; punctures small; striæ none; three or four obsolete raised lines.

Length rather more than two-fifths of an inch.

A smaller species than the preceding and more rare; it differs also in the color of the labrum, the more rounded form of the thorax, and in the elytra being destitute of striæ. It may be sometimes found on plants in June.

#### LAGRIA Fabr. Lam.

*L. AENEA*.—Green; thorax oblong; elytra punctured; antennæ and palpi yellowish.

Inhabits United States.

*L. aenea* Melsh. Catal.

Body green, sometimes tinged with brassy; head irregularly punctured; with a few scattered hairs, which are more numerous on the labrum; a transverse groove between the antennæ, formed by the incisure of the nasus; antennæ yellowish rufous, terminal joint longer than the three preceding ones together; palpi yellowish; thorax cylindrical, rather larger than broad, punctured, sometimes with transverse abbreviated wrinkles; posterior angles [233] slightly excurved; elytra nearly rectilinear, not dilated at the posterior curvature; punctures dense, profound, rather large; beneath blackish-green; tarsi dark testaceous.

Length from two-fifths to nine-twentieths of an inch.

This is not the *Lagria aenea* Fabr. Ent. Syst. Suppl. as the late Mr. F. V. Melsheimer supposed it to be, for independently of the different specific characters in the description of that insect, it has since been referred by that author to the genus *Dasytes*, and must therefore be a Pentamerous insect. The circumstance of that species being removed from the genus *Lagria* enables me to retain the specific name given by Mr. Melsheimer. We obtained a specimen on Red river.

[Belongs to *Statyra* Latr., subsequently described as *Arthro-macra donacivides* Kirby, Faun. Bor. Am. 239.—LEG.]

#### LYTTA Fabr.

*L. AENEA* nob. varies in being green, with black tarsi. The antennæ of this species resemble very much those of the genus *Mylabris*.

## COCCINELLA.

*C. LABICULATA* nob.—This species varies considerably in color, but not, as I believe, in the number or arrangement of its spots.

Var.  $\alpha$ . Spots of the elytra ocellate, being surrounded by a yellowish areola.

Var.  $\beta$ . Elytra yellowish-white, with the black spots as in the species.

[This is the same as the European *Myzia 15-punctata*; it is also described by Say, as *C. mali*, Journ. Acad. Nat. Sc. 4, 93.—LEC.]

## RHYNCHITES Herbst. Latr.

*R. RUBRICOLLIS*.—Blued-black; thorax and feet rufous; elytra striate hairy.

Inhabits United States.

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*R. rubricollis* Melsh. Catal.

Body slender; head hairy, black, with irregular punctures larger on the rostrum; antennæ and labrum dark piceous; thorax rufous, hairy, with dilated irregular punctures, and a longitudinal impressed dilated line, which neither reaches the anterior nor posterior margins; scutel black, rounded; elytra with regular striæ of punctures furnishing upright hairs; interstitial lines with each a series of upright hairs; pectus rufous; postpectus and venter blackish; feet rufous, pale.

Length more than three-twentieths of an inch.

This insect occurs occasionally in Pennsylvania; we also found

terior margin with an impressed transverse line; anterior margin with the punctures so transversely elongated and confluent as to appear wrinkled; feet blackish-piceous, paler at base; scutellum covered with dense prostrate pure white hair; elytra with the impressed punctures larger at base, transversely confluent; humerus rather prominent, obtuse; on different parts of the elytra is dense, dirty brown, very [290] short, prostrate hair, tip unarmed; beneath blackish with a purplish or slight cupreous tinge; a little hairy, particularly on the postpectus.

Length nine-tenths of an inch.

[Is a species of *Monohammus*.—LEC.]

#### SAPERDA Fabr.

**S. VESTITA.** Body entirely covered with very short greenish-yellow hair; elytra with three small dots.

Inhabits near the southern extremity of Lake Michigan.

Antennæ about the length of the body; eyes dark chestnut; thorax with an obsolete dorsal line; elytra unarmed at tip; dots black, small, three on each elytrum, placed one before and near the middle, largest one a little nearer the base and more distant from the suture than the other, and one behind the middle, distant from the preceding in a line with the anterior one.

Length three-fourths of an inch.

A very fine insect. It is also sometimes found in Pennsylvania.

#### CLYTUS Fabr.

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1. **C. SPECIOSUS.** [Ante, p. 118.]

2. **C. UNDULATUS.** [Ante, p. 119.]

#### MOLORCHUS Fabr.

**M. MARGINALIS.** Yellowish; elytra dusky on the disk; antennæ shorter than the elytra.

Inhabits United States.

Body with numerous minute hairs; head yellow; vertex, palpi, blackish; antennæ short, hardly reaching the tip of the elytra, and excepting the three basal joints, blackish; eyes prominent, black-brown; thorax short, transversely oval, yellow with a dusky disk; elytra much abbreviated, rounded at tip, yellow; disk

Dusky, reaching to the base; the margin at tip is broad as to resemble a yellow spot on each elytrum; edge, like that of the thorax, a little elevated, particularly at tip; abdomen long, yet low; segments more or less tinged with rufous at base; not dusky or black; feet more or less dusky, with yellow tarsus, sometimes nearly all yellow; venter somewhat coriaceous.

Length three-tenths of an inch

This species is not uncommon in Pennsylvania, and it is also an inhabitant of the North-west Territory

[Not a Cerambycide, but a Telyphoride, allied to *Meloboris*, and forming the genus *Tryphorus* Læ., — *Tryphorus Keanowethi* — Læ.]

#### HISPA Linn

*H. VITTATA* Fabr. This species varies much in color, so much so indeed, that more than one species might be formed of it by a naturalist who relied implicitly on the [233] description what Fabricius gives of the insect. He describes the thorax to be "obscuræ æneæ, nitens laticibus rufescentibus," and the elytra "obscuræ æneæ, nitidula vitte lata, fuscæ." Now, I have a specimen, taken near Philadelphia, which agrees very well with these characters, although the thorax exhibits a tinge of rufous and has the additional character of an obscure yellowish-brown external margin of the elytra, which might however, on a superficial examination, be very readily overlooked. But occurs



tares; anterior and lateral edge dull sanguineous; elytra serrate on all the outer edge; sutural edge, external edge, and four lines elevated, and with abbreviated sanguineous lines; first line bifurcate at base; third line widely interrupted in the middle and confluent with the fourth line near the tip and on the humeral tubercle; fourth line serrated; humeral tubercle prominent; interstitial spaces with a double series of profound, dilated punctures, separated by elevated lines; tip of the elytra so [294] obtuse as to appear truncated; beneath sanguineous; feet pale yellowish.

Length more than one-fifth of an inch.

Var. *a*. Disk of the pectus and postpectus, black.

This is our most common species, and we found a specimen in the North-west Territory.

[This is *Hispa quadrata* Fabr.—LEC.]

#### GALLERUCA Geoff. Latr.

G. DECORA.—Dusky; elytra dull testaceous, sericeous with golden-brassy hair.

Inhabits North-west Territory.

Body dusky; head with a transverse impressed line between the eyes and another descending between the antennæ; antennæ two basal incisures, whitish; face between the antennæ and a little above them pale yellowish; labrum and palpi blackish; thorax tinged with golden-brassy hair; a longitudinal impressed line, and a lateral sublunate impressed space; anterior margin, particularly on each side, dull whitish; anterior angles with a slightly elevated tubercle surmounted by a single hair, and separated by an impressed line; elytra dull testaceous, sericeous with brilliant, dense, prostrate, golden-brassy hair; punctures rather large, profound, scattered irregularly; beneath blackish, with very short prostrate hair; punctures small; feet whitish.

Length less than one-fifth of an inch.

#### ALTICA Geoff. Latr.

A. TÆNIATA.—Black; antennæ, feet, and vitta on the elytra, white.

Inhabits North-west Territory.

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Body deep black, polished; head with rather distant, profound punctures; region of the antennæ a little elevated and

dull rufous; antennae pale, dusky at base and tip; thorax punctured; punctures rather large and profound, but not very dense; no impressed line; posterior angles with a minute abrupt curvature, acute; elytra punctured like the thorax, with a longitudinal white vitta on the middle of each, commencing at the middle of the base and extending rectilinearly, with a slight degree of attenuation to near the tip, and occupying about the sixth part of the surface; feet pale, posterior tibiae dusky towards the tip.

Length three-twentieths of an inch.

This species resembles *A. stridans* Reichenh. (which seems to be the *Cyrtinus vittata* and *Gyllerius elongata* of Fåhr., and Mr J F Meinhelmer quotes also as synonymous, the *A. flavus* Hanser.) but it is larger, of a more elongated form, and the vein of the elytra is not flexuous as in that common and profusely named insect. I have not met with it in the Atlantic States.

#### KUMOLPIN Kugell Latr

1 *K. FLAVIDUS* — Pale yellowish; elytra striate with double series of punctures.

Inhabits United States

Body densely punctured; punctures rather large and profound; head with two slightly elevated tubercles between the antennae; thorax tinged with rufous; elytra with elevated base, of which the inner one curves round at base and descends a short distance to unite with the external line, interstitial spaces, occupying the

from the vertex bifurcates near the antennæ; antennæ, five basal joints testaceous, more slender than the remaining ones, and hardly equalling their collective length; palpi testaceous, terminal joint black; thorax with short, prostrate, cinereous hairs like those of the head; punctured, punctures rather large, giving origin to the hairs; transversely oval; sides without edges; elytra testaceous; punctures numerous, rather large, subequidistant, giving origin to prostrate hairs; beneath deeper black, with smaller punctures and shorter hairs; feet also with fine hairs, more numerous on the tibiæ which are testaceous.

Length ♂ more than three-twentieths, ♀ one-fifth of an inch.

[Considered by Kirby as the same with the European *Adoxus* or *Bromius vitis*.—LEC.]

#### COCCINELLA Linn.

*C. BITRIANGULARIS*.—White; thorax with six, elytra each with nine black spots.

Inhabits North-west Territory.

Body above white; vertex black, the color extending downwards in a point near each eye; thorax with six large [297] black subquadrate spots, placed by threes in two triangles, one on each side of the middle, the two inner spots of each triangle sometimes confluent; scutel black; elytra, each with nine spots, placed as follows: one, large subquadrate; two small; one large oblong; two small; two, the exterior one elongated; one small, transverse; beneath black; feet yellowish-white.

Length more than one-tenth of an inch.

[Apparently the same as *C. multiguttata* Randall. Bost. Jour. Nat. Hist. 2, 51, which belongs to *Hippodamia*.—LEC.]

#### ORDER ORTHOPTERA.

##### SPECTRUM Stoll. Lam.

*S. FEMORATUM*.—Apterous; intermediate thighs dilated, angulated, and with the posterior thighs armed with a spine near the tip.

Inhabits United States.

Body greenish-brown, without any rudiments of hemelytra; head yellowish with three dilated fuscous vittæ; antennæ elongated, brown; anterior thighs unarmed, simple, bright green:

tibia dull green, tip and tarsus testaceous; intermediate thighs dilated, angulated, pale ochreous, annulated with brown, the inferior angulated lines slightly serrated; a prominent, piceous, acute, robust spine beneath near the tip; tibia greenish, slightly serrated on the inner side; tarsus testaceous; posterior thighs brownish, ochreous, with a prominent, piceous, acute, robust spine near the tip beneath.

Length about three inches.

A specimen occurred at the falls of Niagara on a Hickory tree (*Carya*), and I formerly obtained one near the Missouri river. They are both males.

[Ante, p. 82; this insect has been placed in a variety of genera by different authors *Diapheromerus Sayii* Gray, Synopsis of Phasmidæ (1835) p. 18: *Diapheromera Sayi* Serv. Orthopt. (1839) p. 247: *Bacunculus Sayi* Burm. Handb. 2, part 2, 566: *Bacteria Sayi* Charp. Orth. (1846), pl. 6.—UHLEB.]

[*S. bivittatum* is *Anisomorpha buprestoides* Stoll. Spect. pl. 23, fig. 269: 88, ♂: Gray, Syn. 19: Burm. Handb. 570.—UHLEB.]

## ORDER HEMIPTERA.

[296]

### SCUTELLERA Lam.

1. *S. BINOTATA*.—Head much arcuated, subtrilobate at tip; a large cinereous spot on the humeral region.

Inhabits North-west Territory.

Body oval, yellowish-gray, varied with dusky; punctured; punctures small black; head longitudinally very much depressed.

portion of the latter at base; basal disk dusky; a glabrous line extending to the tip and margined with dusky; a large cinereous semiorbicular spot in which are abbreviated black lines, extending from the humeral angle to the lateral middle; beneath covered with black punctures; feet black; knees and spot near the tip fulvous; tibia fulvous with black lines; tarsi black.

Length more than one-fourth of an inch.

This species may be distinguished by the curvature of [299] the line of the head, and by the large spot on the humeral region.

2. *S. ZENEFRONS*.—Dull fulvous, varied with fuscous; head and two spots on the thorax brassy.

Inhabits North-west Territory.

Body oval, punctured; head densely punctured, convex, with two impressed nearly rectilinear lines from the tip abbreviated at the vertex; lateral edges convexly arcuated, tip rounded, the space included between the impressed lines very slightly projecting; antennæ fuscous, basal joint whitish; thorax dull fulvous, with obsolete longitudinal fuscous spaces, and a brassy triangular spot each side before; lateral edge nearly rectilinear to the posterior angles, which are rounded entire; scutel dull fulvous, varied with fuscous; hemelytra punctured, visible portion triangular; beneath pale, head brassy, a brassy spot on each side of the pectus; thighs with a few black points.

Length about three-tenths of an inch.

This species is subject to vary in being rather smaller, and in the fuscous variegations being hardly discernible, but the other characters remain unchanged.

#### MEMBRACIS Fabr. Latr.

1. *M. DICEROS*.—Thorax 2-horned; varied with brown, pale before; wings and beneath blackish.

Inhabits United States.

Body above punctured, truncated and vertical before, surmounted by two horizontal subconic horns extending laterally; clypeus, vertical portions of the thorax, and triangular space included between the horns, whitish-green, varied with fuscous; horns fuscous behind and beneath; back acutely carinated, terminated in a very acute subulate [300] decurved point nearly as long

as the abdomen, but much shorter than the hemelytra ; sides of the thorax posterior to the horns blackish-brown, with an arcuated spot or line behind the horns, and a band near the tip, whitish ; hemelytra and wings blackish-brown ; beneath blackish ; rostrum, knees, tibia, and tarsi, whitish.

Length three-tenths of an inch.

This is an inhabitant of Pennsylvania, and also of the North-west Territory. It is closely allied to *Centrotus bubalus* Fabr. and is infested by *Leptus hispidus*, nob.

2. *M. TRILINEATA*.—Brownish-rufous ; thorax elevated on the middle, with three longitudinal, one oblique, and one transverse line, whitish.

Inhabits North-west Territory.

Body with rather large dense punctures ; head pale greenish-yellow, obsoletely irrorate with brown points ; thorax before rounded, unarmed ; a dilated pale greenish vitta from the head, is divided by the rounded elevation near the middle of the back, and passes down on each side in an oblique white line, which terminates at the inferior edge behind the middle ; a narrow line on each side passes from the head and terminates at the emargination of the origin of the hemelytra ; a white band near the tip margined with fuscous ; dorsal foliaceous elevation taking its rise behind the line of the origin of the hemelytra, its edge very obtusely curved, and gradually disappearing behind at the white band, its sides in the middle are abruptly compressed ; tip acute, not attenuated ; hemelytra with a punctured scale at base, which

on the sides they are distinctly four or five in number; back over the origin of the wings a little concave; anterior or front of the thorax pale; carina on its concave portion white, and a white oblique band from behind the middle of the back to the exterior edge nearer the tip; tip obtuse, hardly surpassing the hemelytra; hemelytra dull amber, dusky at tip; nervures brown; a fuscous, coriaceous, punctured basal margin extending more than half the length of the wing; a fuscous, punctured scale adjusted in an emargination of the edge of the thorax; beneath piceous-black; knees, tibia, and tarsi, yellowish.

Length one-fifth of an inch.

Var. *a*. Thorax ferruginous or whitish, black or fuscous before and behind.

This species is also an inhabitant of Missouri and Arkansa.

4. *M. BINOTATA*.—Thorax with a compressed horn extending above the head, and two spots on the back.

Inhabits United States.

Body fuscous, punctured; head longer than broad, rounded at tip, minutely punctured; thorax with a projecting horn before, which rises high above the line of the back, compressed, carinated above, each side, and beneath, and incurved towards the tip; between the lateral and [302] inferior carinæ are three elevated lines converging towards the eye; superior carina of the horn continued upon the back to the tip; lateral carina of the horn continued upon the side to the middle of the thoracic edge; carina of the back slightly undulated, with two yellowish spots, of which one is on the middle and the other near the tip smaller and placed nearer to the anterior one than its own length; tip acute; anterior and intermediate tibiæ dilated, foliaceous; posterior tibia with two serrated lines behind; hemelytra opaque, much longer than the abdomen; wings hardly longer than the abdomen.

Length including the horn seven-twentieths; exclusive of the horn more than one-fifth of an inch.

The eyes are very nearly equidistant between the tip of the horn and of the hemelytra. It very closely resembles the *lancolata* Fabr. an inhabitant of South America, of which it may possibly prove to be a variety.

5. *M. LATIPES*.—Thorax with a compressed, porrect horn ; body fuscous, immaculate.

Inhabits United States.

Body fuscous, punctured ; hemelytra paler ; thorax, horn extended in a line with the back and slightly decurved at tip ; but in other respects resembling that of the preceding species ; black immaculate, posterior tip acute ; hemelytra paler than the thorax ; nervures fuscous.

Length equalling the preceding species.

This species very closely resembles the *binotata*, but the horn has a very different direction ; the back is destitute of spots, and the hemelytra seem to be of a more membranaceous texture.

[303] CERCOPIS Fabr. Germar.

*C. PARALLELLA*.—Hemelytra with two whitish bands, which are margined with dusky.

Inhabits North-west Territory.

Dusky yellowish-brown, punctured ; head densely punctured ; dusky in the middle and near the eyes ; a glabrous somewhat elevated longitudinal line ; length less than one-third of the breadth ; thorax less densely punctured than the head ; angulated at the middle of the anterior edge ; a glabrous somewhat elevated line from the anterior central angle, continued on the scutel ; scutel acute, punctured at base, glabrous at tip ; hemelytra densely punctured ; an oblique band from the tip of the scutel, attains the exterior edge near the middle, it is whitish, margined with



## ORDER NEUROPTERA.

## BAETIS Leach.

1. *B. BILINEATA*.—Large, pale ferruginous; inferior wings margined behind with dusky; tergum fuscous with a double series of whitish lines. [304]

Inhabits St. Peter's river.

Head above somewhat fulvous; beneath and front yellow; thorax, first segment yellowish-brown, blackish each side and before; second segment pale brownish, a little tinged with rufous and with indistinct oblique whitish lines, proceeding from the longitudinal impressed line; two brown spots on the middle placed transversely; wings hyaline, whitish, with fuscous nervures; posterior margin of the inferiores fuscous; tergum fuscous; lateral margin whitish; posterior edges of the segments white above; a double series of whitish, oblique, dilated, abbreviated lines.

Length ♀ to tip of the wings one and three-tenths of an inch.

This is much the largest species of this country I have seen; it appeared in considerable numbers.

[Belongs to *Palingenia*, and is *P. limbata* Guér. Icon. Règne An. pl. 60, fig. 7.—UHLER.]

2. *B. ALTERNATA*.—Wings whitish, nervures fuscous; tergum fuscous, segments whitish at their bases.

Inhabits North-west Territory.

Body fuscous; head on the anterior margin and genæ white; thorax pale brownish-livid, yellowish near the scutellum; wings hyaline, with a whitish reflexion, nervures not margined; pleura and pectus varied with yellowish; feet pale ochreous, a fuscous annulus near the tip of the thighs; tergum fuscous; segments whitish at base, one or two ultimate segments with two whitish longitudinal lines; venter whitish, each segment with two oblique lines and two intermediate points, black; seta whitish, with regular fuscous spots alternating.

Length of the body ♂ from two-fifths to half an inch.

\* Closely allied to the *femoratus*, nobis,\* but may be distinguished

\* Western Quarterly Reporter, vol. 2, p. 162.—Ante. p. 171.

[305] from that species at once, by the nervures of the wings being altogether destitute of colored margins.

3. *B. ALBA*.—White; vertex and anterior feet above dusky.

Inhabits Winnepeek river.

Thorax slightly tinged with pale yellowish-brown; anterior feet short, rather robust; nervures upon and near the costal margin dusky.

Length of the body ♀ about half an inch.

This insect appears in immense numbers. They rise upon the wing in the evening, and their short existence in the perfect state appears to be terminated before sunrise. For a more particular account of this species, see the Narrative.

#### ASCALAPHUS Fabr.

A. 4-MACULATUS.—Wings with a white costal spot; antennæ as long as the body; tergum varied with black and testaceous; eyes with a suture.

Inhabits Pennsylvania.

Head and stethidium covered by long cinereous hair, the latter part blackish, varied with pale testaceous; labrum honey-yellow; antennæ as long as the body, dull yellowish-brown; incisures blackish, clavum oval, compressed, blackish with pale incisures; eyes large, prominent, in the middle divided by an impressed line; wings hyaline with a milk-white reflexion, an opaque snow-white spot near the tip of the costal margin, nervures black; tergum testaceous, segments with a dorsal line and oblong spot each side,

Body hairy; antennæ fuscous, less than half the length of the body, filiform; orbits above and before, and hypostoma glabrous, white, the latter with a broad, transverse, brownish line near the tip; labrum white, with two obsolete, dusky, longitudinal spots; maxillary palpi black; a large, transverse quadrate, black, glabrous spot, surrounding the base of the antennæ; thorax, anterior segment five-lines, lines equal; feet whitish, hairy, four anterior thighs annulate with brown near the tip, their tibia at tip and annulus near the base, brown; pleura, incisures whitish; wings hyaline, with numerous irregular, unequal, black and white points and spots, which are larger on the inner and outer margin; nervures and margins alternately spotted with blackish and white; nervures of the disk with only a single line of connecting nervures which pass across the middle; margin with numerous nervures; inferior wings without spots, excepting on the margin.

Length to tip of the wings one inch and a quarter.

Rather rare in Pennsylvania. We obtained a specimen in the North-west Territory, and Mr. Isaiah Lukens informed me that they are extremely numerous near Lake Erie in June.

[This was described by Fabricius, under the name *Sembris punctata*, Ent. Syst., 73. He afterwards described it, Ent. Syst., Supp. 202, as *Hemerobius nebulosus*. It is also *Polystachotes sticticus* Burm. Handbuch. ii. p. 982. *Omylus validus* Walker, Brit. Mus. Cat. 233, 3, and *Hemerobius irroratus*, Fitch, 1st report, p. 92, 1. The name must now remain *Polystachotes punctatus*.—  
UHLER.] [307]

2. *H. VITTATUS*.—Pale yellowish, with a black vitta on the pleura; abdomen fuscous; wings spotted with black.

Inhabits Pennsylvania and New Jersey.

Head with a transverse, quadrate, dusky spot between the eyes; antennæ somewhat longer than the head and thorax, yellowish-rufous, blackish at tip and base; eyes prominent, black; thorax greenish-white, dusky between the wings, first segment a little narrowed before; wings hyaline, with black spots; costal nervures articulate with black and white; a small white spot near the costal tip of each wing; inferior wings with fewer spots than the superior ones, but behind the costal middle is a large orbicular spot, and a smaller irregular one near the tip; metathorax blackish above; pleura with a broad blackish vitta, ex-

tending from near the head to the abdomen; feet blackish, thighs at base, an annulus near the tip of the posterior ones, and posterior tibia towards the tip, pale; abdomen blackish, with an obsolete, pale, small spot on some of the segments of the tergum.

Length to tip of the wings one and two-fifths of an inch.

This fine insect is in the collection of the Philadelphia Museum, and was found by Mr. Titian Peale.

#### CHAULIODES Latr.

*C. SERRICORNIS*.—Brownish-black, wings spotted with white. Inhabits United States.

Head somewhat wider than the thorax, dusky testaceous at base, diameters nearly equal; antennæ deeply serrated, black; wings blackish; superior wings with a white band across the middle not attaining the inner margin and widest on the costal margin, a white spot on the costal [308] margin near the tip, and numerous, small, white dots on the disk near the tip; inferior wings with a narrow band across the middle not attaining the inner margin and near the tip larger spots, white.

Length to tip of the wings from one inch and a quarter to one inch and a half.

A fine insect, which appears to inhabit almost every part of the United States, though I have not met with many specimens any where. Mr. Nuttall brought me an individual from Arkansas; Dr. Bigsby took a specimen as far north as the Lake of the Woods, and I have found one in Pennsylvania, another in Missouri, and a third on Red river of Lake Winnepesaukee.

angle, a third to the carpal spot, and a fourth towards the base, interrupted in its middle; dorsal margin, particularly towards the base, fuscous; surface with scattered hairs, those of the nervures more distinct and blackish; tibiæ and tarsi with black setæ.

Length to tip of wings seven-tenths of an inch.

3. *P. SERICEA*.—Blackish, sericeous; wings varied with fuscous and sericeous.

Inhabits North-west Territory.

Head with a cinereous gloss, and a few long hairs; antennæ brown, incisures margined with yellowish; basal joint color of the head; thorax with a cinereous gloss in a particular light; superior wings varied with pruinose and fuscous; a transverse, quadrate, blackish spot on the middle of the inner margin; hairs numerous, minute, those of the nervures larger and black; inferior wings immaculate; posterior pairs of feet pale ochreous, sericeous, with black setæ.

Length to tip of wings more than two-fifths of an inch.

#### MANTISPA Illig. Latr.

*M. BRUNNEA*. [Ante, p. 54.]

### ORDER HYMENOPTERA. [310]

#### XYELA Dalman.

X. *FERRUGINEA*.—Ferruginous; thoracic spots and base of the abdomen blackish.

Inhabits Arkansa.

Antennæ fuscous, basal joint ferruginous above the antennæ [311] and extending between the eyes is a transverse black spot; thorax each side above the base of the superior wings with a longitudinal blackish spot, connected behind with a transverse, almost indefinite one; metathorax blackish behind; wings hyaline, slightly tinged with yellowish, nervures brown; tergum, three basal segments black, remaining segments obsoletely blackish on their posterior margins; posterior pairs of the tibiæ six-spined, one on the middle, one beyond the middle, and the other at tip.

Length to tip of oviduct seven-twentieths of an inch.

This interesting insect was presented to me by Mr. Thomas Nuttall, who obtained it during his expedition to Arkansa. The forms of some of the wing cellules differ a little from those of

the type of this genus. The first radial cellule receives the first recurrent nervure and is nearly square, slightly oblong, and nearly two-thirds the size of the second cellule, which receives no recurrent nervure and is somewhat smaller than the third cellule. The latter receives two recurrent nervures. The cubital cellules are subequal, bounded beneath by an almost rectilinear line, the third nearly attains the tip of the wing, leaving the fourth cellule very small. The maxillary palpi also are much shorter than those of the Swedish species. This disposition of the nervures will authorize the formation of a distinct section in the genus.

#### XIPHYDRIA Latr.

1. X. ABDOMINALIS.—Black; abdomen rufous.

Inhabits Pennsylvania.

Head confluent punctured; antennæ short; vertex with two distant, longitudinal, yellow spots, and another [312] transverse one on each cheek above; thorax confluent punctured, margined, and with three longitudinal impressed lines distant before; wings fuliginous; abdomen bright rufous; first segment above blackish; feet piceous black.

Length more than half an inch.

The abdominal color of this species distinguishes it at once from any other. In *dromedarius* the middle segments of the tergum are rufous, but the terminal and three basal segments are black, and there is a series of whitish lateral spots.

2. X. TIBIALIS.—Black; four lateral spots of the abdomen,

## TARPA Fabr., Le Pelletier.

**T. SCRIPTA.**—Black, with white lines and spots; abdomen rufous.

Inhabits North-west Territory and Arkansa.

Hypostoma on its anterior margin, mandibles and palpi whitish; line upon the orbits extending from near the antennæ [313] to the occiput and together with an insulated spot each side on the vertex when viewed from behind presenting the form of the figure 3, white; a white slightly oblique spot above the base of each antenna; inferior orbits white: thorax with an abbreviated, transverse, angulated line before, slightly interrupted in the middle, a line before each wing and three small spots on the middle placed triangularly, white; wings hyaline, nervures fuscous; feet yellowish-white; abdomen rufous, first segment, and sometimes the tip, black.

Length from more than three-tenths to two-fifths of an inch.

## CEPHUS Latr.

1. **C. TRIMACULATUS.**—Black; abdomen with a yellowish-white spot each side at the middle.

Inhabits Pennsylvania.

Orbits before, two longitudinal spots on the hypostoma, and base of the mandibles yellowish-white; wings brown-black; metathorax with a pale greenish, membranaceous, triangular spot behind; abdomen on the middle with a transverse oval pale yellowish spot each side.

Length ♂ nearly one-half, ♀ nearly three-fourths of an inch.

Var. *a.* head immaculate.

Var. *β.* a very small indistinct spot on each side beyond the middle.

In the collection of Mr. William W. Wood, the great difference in point of size between the sexes of this insect, might readily lead to error with respect to their specific identity.

2. **C. ABBREVIATUS.**—Black; abdomen rufous at base. [314]

Inhabits Pennsylvania.

♀ Body black, polished; labrum white, with a dilated, longitudinal, fuscous line; thorax with an oblique, white, abbreviated line at the base of the superior wings; scutel with a transverse

white line; metathorax with a longitudinal white triangle; wings hyaline, nervures fuscous; the small nervure which divides the first marginal cellule from the first submarginal cellule is abbreviated and does not reach the margin; feet pale rufous, tibiæ with a white abbreviated line on the exterior side near the knees; posterior tibiæ and tarsi black; abdomen compressed, acutely edged above beyond the middle; first and second segments rufous.

Length seven-twentieths of an inch.

This may be readily distinguished from the preceding species as well by its inferior size and color, as by the remarkable abbreviation of the dividing nervure of the first marginal and submarginal cellules.

#### HYLOTOMA Latr.

*H. DULCIARIA*.—♀ Pale rufous; head, wings and feet violaceous-black.

Inhabits North-west Territory.

Antennæ black, with a slight violaceous tinge; pectus with a large, well defined black spot, tinged with violaceous; feet hardly tinged with violaceous; abdomen yellow; tail black.

Length to tip of the wings nine-twentieths of an inch.

This species was found by Dr. Bigsby, to whom I am indebted for the specimen. It seems to be allied to the *pectoralis* Leach, of which, however, the wings are "luteo-hyalinæ."

LOPHYRUS Latr., Leach.

[315]



This species seems to be allied to *L. americanus* Leach, but that insect is stated to have nineteen joints to the antennæ.

## NEMATUS Jur.

**N. VENTRALIS.**—Black ; venter and feet pale.

Inhabits United States.

♂ Hypostoma, palpi and mandibles at base, whitish ; orbits above and behind piceous ; thorax dilated, triangular line before the wing, and wing scale whitish ; wings slightly dusky, nervures fuscous ; feet honey-yellow, posterior tarsi black-brown ; tergum black, segments each with a yellow band of which the four terminal ones are interrupted in the middle ; venter pale honey-yellow.

Length one-fourth of an inch.

♀ Orbits all round whitish ; white line or spot before [316] the wings with about three obsolete black spots before ; feet white, thighs black in the middle, posterior tarsi blackish ; tergum black, the bands obsolete ; venter white and segments blackish.

Length three-tenths of an inch.

Belongs to *Nematus* Leach, and to *Nematus* ††† Le Pelletier.

## TENTHREDO Latr.

**1. T. BASILARIS.**—Black, hypostoma and basal joint of the antennæ yellow ; tergum bifasciate.

Inhabits North-west Territory.

♀ Body polished ; hypostoma emarginate in a curved line, and with the labrum and mandibles yellow, the latter piceous at tip ; gena with a yellow line abbreviated above ; tongue and palpi pale yellow ; thorax with a yellow line before the wings ; scutellum yellow ; metathorax with two small yellow spots ; wings tinged with ferruginous ; pleura with an oblique, dilated line above the intermediate feet, and a rhomboidal spot above the posterior feet, yellow ; anterior feet greenish-white ; intermediate feet pale yellowish, a black spot on the thighs near the tip behind ; posterior feet pale yellowish, thighs and tibiæ annulate with black at tip ; tergum, first segment white on the posterior margin, fifth segment rufous, penultimate segment with a yellow subtriangular spot on each side, ultimate segment at base, and tail, pale yellow ; venter, fifth segment, rufous.

Length of the body two-fifths of an inch.

♂ Cheeks entirely yellow; a yellow spot on the pleura above the anterior feet, connected with the thoracic line; tergum yellowish-rufous, dusky at tip and black at base; venter yellowish-white, dusky at tip. [317]

This species resembles the *bifasciatus* nob.,\* of which the only specimen I have seen is a female. On comparing the two species, it will be observed that the above described insect is larger, and of a somewhat more slender form; the surface of the head and thorax is much more smooth; the rufous band instead of being on the fourth segment, as in that species, is on the fifth, &c.

2. *T. VERTICALIS*.—♀ Head pale yellow; vertex and antennæ black; tergum yellowish, spotted with black, tip black.

Inhabits North-west Territory.

Mandibles piceous at tip, antennæ rather long; vertex with a somewhat lobated, large black spot, extending by a process down between the antennæ, and connected with another large spot on the occiput; neck, a black line each side; thorax black, about four oblique, short lines in the centre, and dilated line before each wing, yellow; wings hyaline, stigmata and nervures fuscous, costal edge dull yellowish; scutel yellow; metathorax black, a triangle at base, two dots and behind, yellow; pleura black, a yellow spot near the anterior wings and another over the posterior feet; feet yellow, slightly varied with pale testaceous; posterior thighs black on the terminal half, their tibiæ black at tip; tergum yellow, with a testaceous tinge, second, third, and fourth segments

and costal edge; feet pale rufous; posterior tarsi and their tibiæ at tip blackish.

Length of the body half an inch.

4. *T. TERMINALIS*.—Antennæ white at tip; abdomen testaceous.

Inhabits United States.

♀ Body black; head testaceous; venter with a blackish longitudinal vitta; antennæ black, four last joints white; stethidium black; thorax with a piceous triangle before, and a large yellow spot behind; thorax with two small yellow spots; wings tinged with fuliginous; nervures fuscous; carpal spot whitish on the basal half; pleura with a large testaceous spot beneath the superior wings; feet testaceous, coxæ black, tip of the posterior coxæ white; abdomen entirely testaceous.

♂ Tip of the antennæ pale yellowish; superior orbits with a white sagittate spot; occiput each side with a white spot; instead of the piceous triangle of the thorax is a white V-like spot; pleura testaceous; pectus testaceous, disk and posterior coxæ at base black.

Length seven-twentieths of an inch.

The white terminal joints of the antennæ of this species are very distinct and striking.

5. *T. PYGMÆA*.—Black; thorax rufous before; feet white.

Inhabits United States.

♂ ♀ Body polished; hypostoma obscure whitish; thorax, anterior segment rufous, collar dusky; wings dusky; feet white; thighs blackish in the middle behind; posterior tibiæ and tarsi black.

Length ♂ one fifth of an inch, ♀ rather more.

#### DOLERUS Jur.

[319]

1. *D. INORNATUS*.—Body black, polished; feet white; tarsi dusky.

Inhabits United States.

♀ Labrum and palpi whitish; thorax with a line before the wings and wing-scale, white; scutel with a small bullate white spot on each side; wings a little dusky; nervures blackish-fuscous; pleura with an abbreviated white line over the intermediate feet; coxæ color of the feet.

Length one-fourth of an inch.

This species belongs to *Dolerus* †† of Le Pelletier, *Emphytus* Leach.

2. *D. ARVENSIS*.—Blackish-violaceous; thorax rufous, a spot before and triangular spot behind, black.

Inhabits United States.

♀ Antennæ black; palpi and mandibles black; head black with a violaceous tinge; thorax with a longitudinal spot from the collar to the middle, a small spot over the wing, posterior margin connected with a spot, black; metathorax black; wings dusky; pleura and pectus black, tinged with violaceous, the former rufous at the humerus, this color being connected with that of the thorax; feet black; abdomen dark-violaceous.

Length more than seven-twentieths of an inch.

Var. a. Black spot above the wing enlarged and reaching the dorsal spot.

This species belongs to *Hylotoma* Fabr., *Dosythæus* Leach, and *Dolerus* †† Le Pelletier. It is found in the North-west Territory, Pennsylvania, and Arkansa. This species is closely allied to *Tenthredo thoracina* Beauv., but it does not fully agree with his figure, and his description is too unessential to be useful. [320]

3. *D. SERICEUS*.—Entirely black, immaculate.

Inhabits United States.

♂ ♀ Body, particularly the venter and feet, sericeous; with short hairs; wings dusky; tergum glabrous, polished.

dividing nervure of the cubital and discoidal cellules to the posterior margin of the wing; abdomen much compressed, impunctured, polished, oval, rather longer than the petiole; posterior feet elongated.

Length more than three-tenths of an inch.

The proportions of the petiole, abdomen, and posterior feet of this insect are nearly the same with those of *appendigaster* Fabr., I obtained a specimen near the Rocky Mountains, and it is also found in Pennsylvania. The additional nervure is sometimes connected with the radial cellule by a faint, transverse nervure, so as to form a second cubital cellule.

#### FOENUS Fabr.

[321]

*F. TARSATORIUS*.—Black; feet pale rufous; posterior tibia blackish, at base white.

Inhabits Pennsylvania.

Antennæ black-testaceous beneath towards the tip; mandibles testaceous, at tip black; hypostoma each side silvery; stethidium immaculate, confluent punctured; wings hyaline, nervures fuscous; anterior and intermediate feet pale rufous, the tibiæ with a whitish line, the base of the tarsi white; posterior feet piceous, tibiæ blackish, clavate, a white band near the base, which is much dilated before; tarsi white at base, the first joint with a black origin; abdomen blackish, with about three dull testaceous spots on each side; oviduct pale testaceous; valves blackish, at tip whitish.

Length of the body eleven-twentieths of an inch.

#### SIGALPHUS Latr.

1. *S. SERICEUS*.—♀ Black; tergum sericeous; tibia ochreous at base.

Inhabits North-west Territory.

Head with dilated, transversely confluent punctures; nasus minutely punctured; thorax with much dilated, irregularly confluent punctures; scutel polished, almost impunctured on the disk, lateral margin grooved; wings slightly fuliginous, nervures fuscous, those of the base very pale brownish; metathorax with very large, somewhat discoidal punctures; tergum without obvious incisures, black, covered with short, dense, cinereous, sericeous hair; obtuse at tip; venter excavated; anterior pairs of feet black, [322]

sericeous, with ochreous tibiæ and tips of the thighs ; posterior pair black, sericeous, tibiæ ochreous at base.

Length one-fourth to nearly three-tenths of an inch.

Very like the *sulcatus* Jurine, but is much larger ; it differs from *Ichneumon oculator* Fabr., by being immaculate, and from *Cryptus irrorator* Fabr., by the oval form of its abdomen.

2. *S. BASILARIS*.—Black ; base of the antennæ and feet pale yellowish.

Inhabits Pennsylvania.

Head punctured ; antennæ, first and second joints pale yellowish ; mandibles yellowish ; palpi white ; thorax punctured ; scutel, metathorax, and tergum at base longitudinally wrinkled ; wings hyaline, pale yellowish at base ; nervures fuscous ; feet pale yellowish, tips of the tarsi dusky.

Length nearly one-fifth of an inch.

This species is in the collection of Mr. William W. Wood. It is much smaller than the preceding species and readily distinguished by the color of the basal joints of the antennæ and of the feet.

#### BRACON Jur.

1. *B. TIBIATOR*.—Black ; wings fuscous at tip.

Inhabits Pennsylvania.

♀ Wings hyaline, nervures robust, fuscous ; tip including the extremity of the second submarginal cellule, fuscous ; feet, anterior pair of tibiæ and tarsi yellowish-white ; intermediate tarsi

3. *B. LIGATOR*.—Black, abdomen and feet rufous, antennæ with a white annulus.

Inhabits Pennsylvania.

♂ Vertex and occiput impunctured; annulus of the antennæ placed beyond the middle; palpi piceous; stethidium with confluent punctures; thorax with two dilated, abbreviated longitudinal, dull rufous lines; scutellum with a dilated, longitudinal, dull rufous line; wings hyaline, nervures fuscous; metathorax dull rufous; feet rufous, tarsi blackish at tip; posterior thighs with a strong tooth beneath near the tip; posterior tibiæ fuscous; posterior tarsi whitish; tergum punctured, glabrous at tip; oviduct blackish.

Length seven-twentieths of an inch.

4. *B. STIGMATOR*.—Dark yellowish-rufous; metathorax and segment of the tergum black.

Inhabits North-west Territory.

Antennæ as long as the body, dusky towards the tip; vertex between the stemmata black; occiput all round the neck, blackish; metathorax above and on the sides black; pleura with a blackish, dilated, longitudinal line; pectus with a blackish, dilated line before the anterior feet, [324] reaching near the head; wings hyaline; nervures fuscous; stigmata rather large, triangular, fuscous, dull white at the anterior and posterior tips, and also on the costal edge; tergum paler, disk of the first segment blackish.

Length less than one-fifth of an inch.

This insect is one of the many species that deposit their eggs in great numbers in the larva of Lepidopterus insects. In a dead and dried larva, which I found adhering to a tree, were the follicles of forty or fifty individuals of this species. It varies somewhat in the quantity of the black coloring with which it is marked. In some specimens this extends not only along the pectus, but is continued in a capillary line along the edge of the thorax, the metathorax also is entirely black, the tergum is blackish at tip and on the sides, the pectus has a black spot in the middle, and the hypostoma has a transverse, blackish spot.

## STEPHANUS Jur.

*S. RUFIPES*.—Black; abdomen sessile; thorax not remarkably attenuated before.

Inhabits Pennsylvania.

Body somewhat sericeous; palpi pale yellowish; scutel with a groove on each side, rough; metathorax rough, and with two slightly elevated, longitudinal, distant lines; wings hyaline; a large, triangular, fuscous, carpal spot; feet rufous; posterior pair of tarsi dusky; abdomen a little rough at base; oviduct as long as the abdomen.

Length one-fifth of an inch.

Although the arrangement of the wing nervures agrees precisely with *S. coronatus* Jur., yet the form of the body differs materially, the thorax not exhibiting the remarkable [325] attenuation before, and the abdominal petiole is not visible.

## ACAENITUS Latr.

(ANOMALON Jur.)

*A. STIGMAPTERUS*.—♀ Black; incisures of the feet white.

Inhabits North-west Territory.

Thorax densely punctured; two dilated grooves confluent behind; scutel united to the thorax by a carinated line each side; wings tinged with fuliginous; nervures blackish; stigma terminated before by a small white spot; metathorax with large confluent punctures; terminated on each side behind by a short



middle; near the neck black; thorax transversely wrinkled, and with three longitudinal impressed distant lines, of which the intermediate one is black, and the lateral ones black on the exterior side; scutell scabrous, abruptly elevated at tip, and emarginated; [326] metathorax scabrous, black on the disk; wings fuliginous-black; pleura and pectus blackish, the former with an obsolete, longitudinal line beneath the wings; thighs piceous in the middle; posterior pair black in the middle; abdomen compressed almost to flatness, piceous-black, margins of the segments paler; elongate-oval; rounded, but sharp-edged at tip; tergum and venter also with sharp edges.

Length nearly seven-tenths of an inch.

This species is not of very common occurrence. It is very closely allied to *Banchus cultellator* Fabr.

#### CHALCIS Fabr. Latr.

1. *C. MICROGASTER*.—Slender, black; anterior pairs of feet and posterior tarsi, yellowish; peduncle as long as the abdomen.

Inhabits Pennsylvania.

Stethidium with dilated, dense punctures; metathorax with an angulated line above the insertion of the abdomen; wings hyaline, costal nervure fuscous; posterior feet black; tarsi yellowish; first joint of the coxæ with a small acute tooth above near the tip; thighs as large as the abdomen, with numerous, small, regular teeth on the posterior edge; tibiae, terminal spine longer than the first joint of the tarsi; abdomen polished, a little compressed, triangular, the superior angle rounded.

Length less than one-fifth of an inch.

2. *C. OVATA*.—Robust, black; feet yellow, thighs black at base. head with a golden reflection.

Inhabits Ohio and Pennsylvania.

Head black, with golden sericeous hair, which is indistinct on the vertex; antennæ testaceous beneath towards the tip; stethidium with dilated, dense punctures, a little [327] sericeous with golden hair; scale covering the base of the wings yellow; wings hyaline; nervures fuscous, at base pale yellowish; feet bright yellow; basal half of the anterior pairs of thighs black; posterior thighs smaller than the abdomen, black, with a yellow spot on

the tip above, dentated on the posterior edge; posterior tibiæ piceous on its basal incisure; terminal spine robust, shorter than the first tarsal joint; first joint of the posterior coxæ with a robust tooth above near the tip; abdomen subovate, polished; first segment nearly glabrous, second segment hairy on each side, remaining segments hairy near their tips.

Length one-fifth of an inch.

#### LEUCOSPIS Fabr.

**L. AFFINIS.**—Abdomen sessile; oviduct as long as the abdomen; black, varied with yellow; collar each side and behind margined with yellow, and with an abbreviated, transverse, yellow line on the anterior submargin.

Inhabits Pennsylvania.

♂ Body densely punctured; antennæ, basal joint yellow; collar margined each side and behind with yellow, the yellow abbreviated line on the anterior submargin is about half the width of the collar; thorax, incisure at the base of the wing dull yellow; scutel with a transverse yellow line; wings brownish; pleura, a yellow line over the insertion of the posterior feet; feet yellowish, thighs dusky or black at base; posterior thighs black, with a yellow spot at base and another at tip on the exterior side; posterior coxæ testaceous at tip; tergum with three nearly equal bands, and an oval, longitudinal spot near the tip, yellow; venter with a yellow spot each side, opposite to the termination of the third band of the tergum. [328]

♀ Resembles the male, but the bands of the tergum

rafter in a barn, very busily feeling with its antennæ for a proper situation to deposit its eggs. Having found a suitable place, the insect, after some exertion, suddenly disengaged its oviduct from the groove and valves, and gradually thrust the instrument into the wood, nearly to the base; then having for a short time remained at rest, probably in order to protrude the egg, the oviduct was withdrawn, adjusted in its dorsal groove; and the insect proceeded again as before, in search of another spot suitable for its purpose. I could not ascertain the kind of larvæ, within the wood, that received these eggs.

#### PSILUS Jur.

*P. BREVICORNIS*.—Black, polished, immaculate; tibiæ and tarsi piceous.

Inhabits St. Peter's river.

Antennæ short, first joint much elongated, second joint longer than the remaining ones, which are subcylindric-quadrate; [329] mandibles pale testaceous; thorax convex, rounded, two faint impressed lines each side behind converging to the scutel, and on the posterior margin two indistinct dull whitish spots; scutel elevated, convex; feet dark piceous; thighs nearly black; wings, costal nervure indistinct; abdomen depressed fusiform, acute at tip.

Length more than one-twentieth of an inch.

#### BETHYLUS Latr.

*B. RUFIPES*.—Black; antennæ and feet rufous.

Inhabits North-West Territory.

Body slender, polished, black; mouth rufous; thorax punctured; wing joint ochreous; abdomen, incisures and terminal segment obscurely piceous.

Length less than one-fifth of an inch.

This insect is also an inhabitant of Missouri.

#### PROCTOTRUPES Latr.

*P. CAUDATUS*.—Pale testaceous; oviduct as long as the abdomen.

Inhabits North-west Territory.

Head with a blackish, transverse line between the antennæ;

thorax and scutel impunctured; wings hyaline, with a very slight ochreous tinge, stigmata very distinct, and with the costal nervures fuscous, the other nervures light brownish, the process of the radial nervure continued transversely to the middle of the disk of the wing, is not only extended from that point to the extremity of the wing, but also towards the base of the wing, terminating in this direction at the first transverse nervure. [330]

Length of the body nearly two-fifths of an inch.

This species was also found in Missouri.

EDYCHRUM Latr.

1. H. VENTRALE. Green polished; tergum tinged with blue; antennæ blackish at tip; venter bronze.

Inhabits Pennsylvania.

Antennæ, excepting the first joint, blackish-brown; front impressed; stethidium with dilated punctures; thorax in the middle between the wings, with a purplish shade; wings dusky, nervures fuscous; tarsi, excepting the basal joint, dark brownish; tergum passing to bluish-purple towards the tip; tip very obtusely rounded, terminal segment longer than the preceding one; venter entirely dull bronzed.

Length more than one-fourth of an inch.

2. H. DIMIDIATUM.—Green polished; posterior half of the venter bronze.

Inhabits Pennsylvania.

Antennæ, excepting the basal joint, and palpi, brownish-black; front somewhat impressed; vertex between the stemmata dark

Head with short cinereous hair, somewhat longer about the mouth; densely punctured; thorax and scutel densely punctured, and with scattered, cinereous short hair; posterior segment of the former, with two light parallel impressed lines; wings hyaline, nervures fuscous; metathorax with a longitudinal, impressed, very distinct line; and a transverse one at base; hair more obvious each side; punctures smaller than those of the thorax; abdomen more hairy than any other part of the body.

Length three-tenths of an inch.

This insect also occurred on the Missouri, at Engineer Cantonment, and in Pennsylvania.

#### TIPHIA Fabr.

1. *T. INORNATA*.—Black, immaculate; wings yellowish fuliginous.

Inhabits Ohio and Pennsylvania.

Head punctured; antennæ piceous, paler towards the tip; mandibles piceous, blackish at tip; thorax punctured, wing-scale and posterior margin of the first segment impunctured, edge of the latter piceous; metathorax with three longitudinal, slightly elevated lines; posterior edge also slightly elevated into an acute line; feet hairy, tibiæ and tarsi more or less piceous; abdomen, particularly behind hairy.

Length three-fifths of an inch.

[332]

2. *T. INTERRUPTA*.—Black, stethidium with yellow spots; tergum with yellow spots and bands.

Inhabits Pennsylvania.

Antennæ dull black-brown, first joint polished, piceous at tip; mandibles piceous, black at tip; thorax with a spot each side before, three in a line between the origin of the superior wings, yellow; scutel with a yellow, transverse line; wings hyaline, costal margin fuliginous; metathorax at the tip each side with a double longitudinal, yellow spot; pleura with a vertical, yellow, oblong spot beneath the origin of the superior wing; tarsi pale piceous; tibiæ, anterior pair blackish-piceous, posterior pairs pale piceous; thighs black; tergum a little iridescent; first segment with a band abruptly and widely narrowed above; second segment with an oval spot each side; third segment, band gradually narrowed

in the middle; fourth and fifth segments, bands slightly interrupted; venter immaculate.

Length nine-twentieths of an inch.

In the collection of Mr. William W. Wood.

This species would seem to be allied to the *serena*, judging by the description that Fabricius gives of that insect, particularly as he describes the costal margin of the wings to be fuscous. That insect, however, is stated to be only a little smaller than the *namea* of the same author, a size which at once puts that species out of the question.

#### POMPILUS Fabr. Latr.

1. *P. FASCIPENNIS*.—Black; wings hyaline, with a fuscous band near the tip; abdomen rufous at base.

Inhabits United States.

♀ Hypostoma and inferior portion of the front, with [333] numerous silvery hairs; wings with fuscous nervures; a fuscous band including nearly all the radial cellule, and not reaching the posterior angle; tip slightly margined with fuscous; posterior thighs and tibiæ at base rufous; abdomen sessile, first and second segments rufous.

Length about three-tenths of an inch.

2. *P. MARGINATUS*.—Black; wings dusky, with a broad, darker posterior margin; abdomen sessile, first and second segments rufous.

Inhabits North-west Territory and Missouri.

♀ The terminal dark margin of the wings is so broad as to reach almost to the terminal cubital cellule, and passes round on the costal margin to the origin of the radial cellule; on the inferior wings is also a broad, terminal, darker margin.

thorax punctured; anterior margin, a spot each side near the head, a longitudinal, abbreviated, central line, yellow; scutel with a spot on the disk, and another transverse one beneath its tip, yellow; wings immaculate, nervures blackish; pectus with a yellowish spot over the intermediate and another over the posterior feet; coxæ, first joint with a dilated yellow line; posterior feet elongated; tergum [334] polished; first segment with a rather large yellow spot on each side, angulated before; second, third, fourth, and fifth, with each a yellow band, slightly interrupted in the middle, and at its termination on each side dilated into a spot; sixth segment dull ochreous; tail piceous.

Length nearly two-fifths of an inch.

This insect has considerable resemblance to the *macularia* Fabr., but the longitudinal thoracic line, scutellar spot, the form and number of the bands of the tergum, &c., sufficiently distinguish it. It is more especially found in Missouri.

2. *C. FERRUGINEA*.—Ferruginous; wings violet; pleura and metathorax black.

Inhabits United States.

♂ Antennæ beyond the third joint, gradually shaded into fuscous; mandibles, the two teeth black; thorax, middle segment with a black anterior margin; posterior segment and scutel, black on each side; wings decidedly violaceous; posterior coxæ at base black; tergum, first segment at base and tip, and second segment at tip, black.

Length less than three-fifths of an inch.

3. *C. BIPUNCTATA*.—Black; wings dark violaceous; posterior thighs bright rufous in the middle; a small yellow dot each side at the tip of the metathorax.

Inhabits United States.

♂ Hypostoma, labrum, anterior orbits, and line on the basal joint of the antennæ before, yellow; mandibles piceous; palpi pale; collar yellow on the posterior margin, and with the thorax and scutel with somewhat distant punctures; wings violaceous; posterior thighs, excepting at base and tip bright rufous.

Length from one-half to three-fourths of an inch.

♀ Hypostoma and labrum black, the anterior orbits [335] only yellow; collar destitute of the yellow margin behind. Smaller than the female.

This species may readily be distinguished by the two small bright yellow dots at tip each side of the metathorax, and the bright color of the posterior thighs. It varies considerably in size.

**BEMBEX** Fabr., Penn.

**B. MONODONTA** — Black, tergum with dilated, greenish yellow bands.

Inhabits Pennsylvania.

Front and vertex with numerous hair; labrum with a greenish oblong, margined spot each side, near the base, thorax hardly hairy, anterior edge terminating in a spot on the pleura, an oblique, abbreviated line above the origin of the wings, terminating in a comma formed spot behind, greenish yellow, meso-thorax, a transverse, rectangular line at base, and an arcuated one at base, slightly interrupted in the middle, greenish yellow, thighs, at tip, tibia and base of the tarsus, pale yellowish, tips of the latter dusky, a dilated black line near the tip of the anterior tibia, wings hyaline, tergum with six yellow and green bands which occupy more than two-thirds of the surface, first band black base before, yellow, with a broad green posterior margin remaining; bands somewhat dilated before, the second and third bands yellow, with a green central dash, fourth and fifth bands yellow, their anterior margins green, terminal band entirely yellow, venter entirely black, a single elevation on the



lowish approximate spots above the middle; feet pale yellowish; thighs black on the basal two-thirds, those of the anterior feet black only on the exterior side; tergum with four yellow bands, dilated on the sides, and gradually narrowing to the middle of the back, where they are slightly interrupted, the terminal one widely interrupted; two terminal segments with large punctures each side and at base; venter with three small yellow spots each side near the middle; ♂ with an obsolete spot each side on the two segments beyond the bands, and the anus is three-spined, of which the lateral ones are curved, and ♀ with an obsolete, yellowish line before the wing on each side.

Length ♂ three-fifths, ♀ nearly seven-tenths of an inch.

This species is in the collection of Mr. William W. Wood. The hypostoma of the male specimen is occupied by the black basal spot, excepting on its anterior margin. The bands of the abdomen in this species are not at all dentated.

2. *M. VENTRALIS*.—Black, obscurely iridescent; tergum [337] with about five yellow bands, interrupted, but not narrowed in the middle.

Inhabits Pennsylvania.

♂ Orbits anteriorly obsolete tinged with dull yellowish; antennæ, first joint beneath yellow; hypostoma, labrum, and mandibles black, palpi whitish; thorax punctured; a line on the anterior edge, with a spot at tip on the pleura, and a small, longitudinal, oval spot each side above the inferior wings, yellow; scutel with a transverse yellow line; metathorax at tip each side compressed and yellow; wings hyaline, very slightly tinged with fuliginous; nervures fuscous; feet yellowish; thighs black from the base to near the knee, first pair on the anterior side only the basal half black; tergum with about five or six yellow bands, which are rather wider on the back and interrupted by a very narrow space; excepting the first band which is slightly undulated, slightly narrowed on the back, and interrupted by a wider space; the ultimate bands narrowed each side and interrupted near a spot on the lateral margin; terminal segment with large, dense punctures, as numerous on the disk as upon the sides; anus three-spined, of which the lateral ones are curved; venter each side with a triangular spot at the tip of each of the dorsal bands excepting the first.

Length nearly half an inch.

I have not seen the female, the male is in the collection of Mr. William W. Wood.

#### ASTATA Latr.

A. UNICOLOR.—Deep black, immaculate; wings dusky at tip.

Inhabits North-west Territory and Missouri. [338]

♀ Head with rather long, silvery hair; thorax and scutel with remote punctures, the former with a very slight appearance of longitudinal lines before, the latter with a longitudinal impressed line at tip, metathorax with dense, dilated punctures; wings hyaline, with a broad, dusky tip, nervures black; tarsi piceous: abdomen polished, immaculate.

Length less than half an inch.

#### OXYBELUS Latr.

O. 4-NOTATUS.—Black; tergum with a slight, whitish, abbreviated line on each side of the first and second segments.

Inhabits Pennsylvania.

Antennæ towards the tip beneath, stethidium, immaculate; wings hyaline, nervures brown; metathorax and scutel each with three raised lines, two superior spines of the former whitish at tip, decurved; inferior spine larger, black, tarsi testaceous at tip; anterior tibiæ testaceous on the inner side; tergum polished; lateral abbreviated line of the first segment much more distinct than that of the second.

Length nearly one-fourth of an inch.

#### GORYTES Latr.

G. BIPUNCTATUS.—Black, collar and scutel with a white line; wings with two white spots.

of the antennæ before,

*Arpactus* Jurine, and of course possesses those oblique parallel lines of the metathorax which Jurine mentions as distinguishing this genus.

PEMPHREDON Latr. Fabr.

1. *P. CONCOLOR*.—Black, minutely punctured; metathorax with dilated punctures; abdomen glabrous.

Inhabits North-west Territory.

Head with minute pubescence, more distinct on the front; mandibles obtusely bifid at tip, immediately above which are two obtuse teeth; punctures minute, sparse on the vertex; thorax with a slightly impressed, longitudinal line, from which proceed numerous, minute wrinkles, curving outwards and backwards, punctures larger than those of the head; wings slightly fuliginous, nervures blackish; metathorax with dilated punctures, or slightly impressed cavities; feet somewhat sericeous; abdomen polished, impunctured; petiole moderate.

Length of the body nearly seven-twentieths of an inch.

This is allied to *P. unicolor* Fabr.

2. *P. INORNATUS*.—Black, immaculate, punctured; abdomen impunctured, polished; petiole nearly one-third the length of the abdomen.

Inhabits Pennsylvania.

Wings hyaline, very slightly tinged with dusky, the [340] first submarginal cellule receives the two recurrent nervures; nervures dark fuscous: stigma rather large.

Length less than three-tenths of an inch.

STIGMUS Jur. Latr.

8. *FRATERNUS*.—Black, antennæ and feet yellowish.

Inhabits Pennsylvania.

Body deep black, polished, not obviously punctured; mandibles and palpi whitish; wings hyaline, nervures pale brown, stigma piecous-black, whitish at base; origin of the wings yellowish; pleura with a white spot rather before the origin of the wings; feet immaculate; venter whitish at tip.

Length rather more than three-twentieths of an inch.

This species is in the collection of Mr. William W. Wood. It is closely allied to the *ater* of authors, the petiole of the abdomen, however, is proportionally longer.

## CRABRO Fabr. Latr.

1. *C. TIBIALIS*.—Black, polished; thoracic line, scutel, knees, and tibiæ, yellow; abdomen with piceous incisures.

Inhabits Pennsylvania.

♀ Head with a slightly impressed frontal line, extending to the stemmata; antennæ, basal joint yellow; hypostoma silvery, brilliant; thorax with a transverse, yellow line on the collar, not extending to the postpectus; scutel yellow; wings hyaline; nervures fuscous, those of the disk pale at base; metathorax slightly carinated each side with a longitudinal, impressed line, which is a little dilated beyond the middle, and a slight transverse line on the middle; [341] pleura immaculate; tarsi slightly tinged with testaceous; posterior pair entirely black; abdomen rather long, blackish-piceous; incisures edged behind with pale-piceous, the second segment above margined behind with pale-piceous.

Length three-tenths of an inch.

A small species in the collection of Mr. William W. Wood.

2. *C. SCUTELLATUS*.—Black, polished; thoracic line, scutel, knees, and tibiæ, yellow; abdomen totally black.

Inhabits Pennsylvania.

Length ♀ one-fifth of an inch.

This species closely resembles the preceding, but is smaller; the abdomen proportionally shorter, and entirely black; the yellow line of the collar extends to a yellow spot at the commencement of the pleura; the transverse line of the metathorax is

tinged with rufous ; tergum on the second, fourth and fifth segments with a transversely oval spot. [342]

Length three-tenths of an inch.

4. *C. TRIFASCIATUS*.—Black : scutel, two spots on the collar, base of the antennæ and lateral spots of the tergum, yellow.

Inhabits North-west Territory.

Body with numerous, short hairs ; hypostoma silvery ; first joint of the antennæ and middle of the mandibles, yellow ; thorax punctured ; collar with two yellow spots ; scutel yellow ; meta-thorax with dilated, confluent punctures, and an impressed longitudinal line ; wings fuliginous, nervures brown ; pectus with a yellow spot before the wings ; feet yellow, thighs, and a line on the inner side of the tibiæ, black ; tarsi dusky at tip ; tergum polished, impunctured ; a yellow band on the middle of the second segment interrupted above : a short yellow line each side of the third segment ; a yellow band on the fourth segment, slightly interrupted above ; a yellow band on the fifth segment, not interrupted but only slightly emarginate above ; venter immaculate.

Length two-fifths of an inch nearly.

#### PHILANTHUS Fabr. Latr.

1. *P. PUNCTATUS*.—Black ; head and thorax with yellow spots ; tergum with large punctures and four yellow bands.

Inhabits Pennsylvania.

♂ Eyes very slightly emarginate ; a longitudinal line each side of the hypostoma, a triangular spot on the middle of the anterior margin, another on the front, a small rounded spot on the basal joint of the antennæ before, a small dot each side on the vertex, and another behind each eye, yellowish-rufous ; thorax uneven, with large profound punctures : a line on the collar, another on the scutel, before [343] which is a smaller one, and wing-scale, yellow ; wings fuliginous ; pleura with a double yellow spot beneath the anterior wing : feet honey-yellow, thighs black at base, tibiæ bright yellow before ; tergum rough with large profound punctures ; first segment rounded, immaculate ; second with a broad, yellow, slightly arcuated line, touching the anterior edge and curving towards the posterior angles ; third, fourth and fifth segments, each with a narrow, dull yellow band on the posterior margin ; venter immaculate.

Length less than two-fifths of an inch.

2. *P. POLITUS*. [Ante, p. 113.]

[*CERCERIS* Latr.

*C. DESERTA*.—Black; hypostoma, feet, and bands of the tergum, yellow. [344]

Inhabits North-west Territory, Missouri, and Pennsylvania.

♂ Hypostoma entirely yellow; antennæ yellow before, dark brown behind; collar with two transverse yellow spots; scutellum with a transverse line, yellow; wings hyaline, brownish on the costal margin near the tip; feet yellow; anterior thighs black on the posterior middle, intermediate thighs on the posterior base and posterior thighs at tip, black; tergum, first joint rounded with a spot each side; second and third segments with each a band on the posterior margins slightly and widely emarginate before, remaining segments with each a narrower band on their posterior margins, yellow; venter, three or four first segments with each a lateral, triangular, yellow spot.

Length more than two-fifths of an inch.

Var. *α*. metathorax with a yellow, oblique line each side behind; first joint of the tergum immaculate.

Var. *β*. metathorax and first joint of the tergum immaculate; bands of the tergum excepting the first, very narrow, linear; ventral spots obsolete; feet with a larger proportion of the black color.

Var. *γ*. a small yellow spot each side before the tip of the scutellar line.

low band on the posterior margin; second segment with a yellow band on the posterior submargin somewhat sinuated before, and an oval, oblique, yellow spot on the middle of each side; third and fourth segments with each an abbreviated, whitish, submarginal line behind; venter with a spot at tip of the first segment, and a submarginal band on the second behind.

Length from nine-twentieths to more than three-fifths of an inch.

Var. *α*. Spot on the second segment of the tergum elliptical.

Var. *β*. A pale yellowish spot on each side of the scutel, and nearly in a line with it.

This species is very closely allied to the *coarctata* Fabr. of Europe, but the whole of the hypostoma is yellow, the line between the antennæ being only a process from it; there is no yellow point beneath the wings; none on the first segment of the tergum; and the bands on the third and fourth segments are always much abbreviated, never extending to the sides or upon the venter.

Like the *coarctata*, this species constructs for each of its eggs a hollow globe of earth, with a short ascending neck, the rim of which is sometimes widely outspread horizontally; it is often built around a twig of a bush for support, as represented by Degeer, (*Hist. abrégée des Insectes*, vol. 2, pl. 16, fig. e.) sometimes the nest occurs simply attached to the superior page of a leaf. The egg deposited in this globe in June, is inclosed with a sufficient supply of food, [346] consisting of the larvæ of some of the nocturnal Lepidoptera. Early in July or towards the middle of that month, the perfect insect makes its way through the side of its dwelling. The form of the first segment of the abdomen of our species, is similar to that of Schaeffer's representation of his *Verpa nona*, (*Icon*. vol. 1, pl. 53, fig. 10,) which is proportionally much smaller than in Degeer's figure of the *coarctata*. This species is found as well in Pennsylvania as in the North-west Territory and Missouri.

2. *E. VERTICALIS*.—Black; hypostoma above, anterior thoracic margin, scutellar line, posterior submargins of the abdominal segments, and spot each side on the first and second segments, yellow; metathorax with a vertical spot each side at tip.

Inhabits Pennsylvania.

This species differs from the preceding in the following characters; anterior portion of the hypostoma with a deeply trilobated black spot; superior wing-scale rufous; a small yellowish spot beneath the superior wing, and a yellowish line over the insertion of the inferior wing; a vertical, oblong, yellow spot each side near the inferior tip of the metathorax; a small spot each side on the first segment of the tergum, and the yellow margin is reflected backwards on the lateral edge for a short distance; the spot of the second segment is elongated, and the bands of the third and fourth segments pass round the venter. Size about equal to the preceding, and seems to be allied to the *pompiformis* Fabr.

3. E. ANORMIS.—Black; first abdominal segment very short and dilated.

Inhabits St. Peter's river and Arkansa.

♂ Antennæ with the scapus yellow before; hypostoma attenuated, truncate at tip, with large, longitudinal punctures, and at base a transverse, yellow, arcuated line, a [ 347 ] small spot on the front, another in each emargination of the eyes, and a transverse one behind the eyes on each side, yellow; thorax densely punctured, a yellow spot on each side of the collar; wing-scale yellow, with a pale-brown spot; wings fuliginous; scutel with a transverse yellow line; metathorax on each lateral margin with an oblique yellow line; pleura, a yellow spot under the superior wing; feet yellow; thighs, except at the knees, and spot on the anterior tibiæ, black; tergum, segments yellow on their posterior margins first and second segments with each a yellow lateral



Inhabits North-west Territory and Missouri.

♀ Head black; dilated posterior orbits, and anterior orbits to the emargination of the eyes, ferruginous; hypostoma, scapus of the antennæ and mandibles, ferruginous; tip of the former acutely emarginate in the middle; flagellum black-brown; labial palpi testaceous, very long, ciliate with long hairs, three-jointed; terminal joint much compressed, flat, obtuse at tip; stethidium black; collar and wing-scale ferruginous; scutel with two large yellow [348] spots; metathorax with a transverse, yellow line, and at the base each side a large ferruginous spot; wings a little fuliginous; pleura with a yellow spot beneath the superior wings; feet ferruginous; tergum black, with five broad, bright yellow, somewhat dentated bands, the posterior one abbreviated; first and second segments with each a large ferruginous spot on each side; venter black, ferruginous at base.

Length more than seven-tenths of an inch.

#### ODYNERUS Latr.

*O. ANNULATUS*.—Segments of the tergum yellow on their posterior margins; first and second segments with a lateral, ferruginous spot on each.

Inhabits North-west Territory and Missouri.

♂ Head black; hypostoma yellowish, truncate at tip, and with a small denticle each side; a large triangular spot on the front, front of the scapus of the antennæ, mandibles, and anterior orbits to the bottom of the emargination of the eye, yellowish; posterior orbit above with a ferruginous spot; antennæ, terminal joint very much compressed, ferruginous, and reflected outward and backward on the two preceding joints; stethidium black; collar and wing scale ferruginous; scutel with two yellow spots; metathorax with a transverse, yellow line, and at the base each side a large ferruginous spot; wings a little fuliginous; pleura with a yellow or ferruginous spot beneath the superior wings; feet ferruginous; tergum black with six broad, bright yellow bands; first segment ferruginous excepting the posterior margin, with a black spot in the middle; second segment with a large ferruginous spot each side, in which is a smaller yellow spot; venter black, ferruginous [349] at base; posterior segments with yellow posterior margins.

Length more than half an inch.

♀ First and second joints of the antennæ ferruginous; tergum with five yellow bands; first and second segments ferruginous, with yellow posterior margins, the latter segment with a large yellow spot each side, and more or less of black in the middle.

Size very little larger than the male.

The very striking similarity in markings between this species and the *Pterochilus 5-fasciatus*, led me at first to consider it the male of that species, but having several specimens, on submitting them to a more accurate inspection, I discovered that one of the number is a female nearly corresponding in size with the others, and agreeing with them in the form of the termination of the hypostoma and in the ventral bands, which specifically distinguish this species from that just mentioned.

#### NOMIA Latr.

N.? HETEROPODA.—Hairy, blackish-fuscous; wings blackish at tip; posterior tibia much dilated, triangular; terminal joint of the antennæ compressed, dilated.

Inhabits North-west Territory, Arkansa, and Maryland.

♂ Body blackish-fuscous, with cinereous hair; antennæ hardly as long as the thorax, terminal joint compressed and dilated on the inner side, subsecuriform; mandibles unarmed; wings slightly tinged with dirty yellowish, with a broad, blackish, terminal border, nervures reddish-brown; intermediate feet with the thighs very much dilated, compressed, triangular, first joint of the tarsus dilated, and compressed before; posterior feet with the thighs [350] dilated, particularly towards the tip; tibia remarkably dilated,

## PANURGUS Panz.

**P. 8-MACULATUS**—Black; tergum with four, transverse, yellow spots on each side.

Inhabits United States.

♂ **Hypostoma**, labrum, mandibles at base, inferior part of the anterior orbits, yellow; antennæ brown, yellowish beneath and bright yellow on the anterior side of the basal joint; thorax slightly tinged with brassy, a small yellow point each side on the collar; pleura with a yellow spot before the wings; wings slightly dusky, pale at base, nervures fuscous; feet yellow, middle of the thighs and posterior middle of the tibiæ blackish; posterior feet blackish-brown, knees and base of the thighs yellow; tergum dark brown, four first segments each with a transverse, yellow spot. [351]

Length more than one-fifth of an inch.

♀ **Hypostoma** with three, longitudinal, yellow spots, of which the intermediate one is longest; orbits on the anterior inferior portion with a triangular yellow spot; antennæ, basal joint entirely black: spots of the tergum less elongated than those of the male and the feet have more of the black color.

Length rather over one-fourth of an inch.

## MEGACHILE Latr.

**1. M. INTERRUPTA**.—Thorax surrounded by ferruginous; tergum five banded.

Inhabits Missouri.

♂ **Body** punctured, above glabrous; head black; antennæ first joint at base and third and fourth joints dull rufous; hypostoma, broad frontal orbits, and mandibles at base, yellow; vertex with a ferruginous band, interrupted in the middle and extending down the cheeks; labrum rufous, a small black spot at base; thorax black, surrounded by a ferruginous margin, which is interrupted before, and passes upon the posterior margin of the scutel; wings fuliginous; pleura with cinereous hair beneath the wings; feet rufous, tarsi with yellow hair; tergum convex, black, with dilated, obscure, rufous, scarcely definite bands, five in number, on each of which, excepting the basal one, is another yellow band emarginate each side behind, and the three posterior ones are interrupted in the middle; anus trilobated; lobes yellow.

low, intermediate one small; posterior coxæ each with a robust yellow spine; venter with transverse bands of long, dense, yellow hair.

Length nearly two-fifths of an inch.

♀ The black color of the front extends down upon the [352] middle of the hypostoma nearly to its tip; the rufous color on the basal joints of the antennæ is obsolete; labrum black on the disk; mandibles black, excepting a small, rufous spot at base; the three last bands of the tergum are destitute of any rufous color about them; venter densely covered with hair: mandibles, as in the male, three-toothed; posterior coxæ unarmed.

Length about the same as the male, but more robust.

2. *M. EMARGINATA*.—Black; a band on each abdominal segment, slightly interrupted in the middle, and emarginated each side before.

Inhabits Missouri.

♀ Body punctured, above glabrous; head with a small yellow dot each side of the vertex; mandibles five-toothed; thorax with a small, whitish spot before the wings; wing-scale whitish, with a brown spot; a whitish spot on the posterior angles, forming a curve with two whitish spots on the scutel; wings hyaline, nervures fuscous; feet black, a dilated whitish line on the exterior side of the tibia, tarsi with dull yellowish hair; tergum convex, a whitish band on each segment, very slightly interrupted in the middle, and, excepting the first one, deeply emarginated each side before, the terminal segment with two rounded spots instead

the basal band widely interrupted, second band less widely interrupted, the penultimate one hardly interrupted, the ultimate one entire.

Length about seven-twentieths of an inch.

That these three species are congeneric is evident, but they do not correspond in all respects with the genus *Megachile* as defined by entomologists. The trophi agree very well, and the form of the nails of the feet in the two sexes are also similar, but the tergum is convex, as in *Osmia*, and the abdomen curves very much downwards, towards the tip, as in *Stelis*, from which latter genus they differ by having a hairy venter.

#### CAELIOXYS Latr.

C. 8-DENTATA.—Black; abdomen with five white bands, tip eight-toothed.

Inhabits United States.

♂ Front and hypostoma with dense, long, dull yellowish hair; thorax with a dentated band before, interrupted in the middle, a spot at the base of the wings and a transverse line at base of the scutel, white; wings a little dusky on the apical margin; feet rufous; tergum with five white bands, of which the two or three terminal ones are double; segments each with a transverse indented line; tip with eight teeth, of which two are on each side, and four at the extremity placed two above and two beneath; venter with a white line on the posterior margin of each segment, the basal and terminal ones obsolete. [354]

Length two-fifths of an inch.

Var. a. Spots and lines of the thorax obsolete; feet excepting the tarsi, black.

This is an inhabitant of various parts of the United States, from the North-west Territory to Arkansa, and is common in Pennsylvania.

#### NOMADA Fabr.

N. BIMIGNATA.—Terminal half of the wings with a dusky margin; abdomen rufous, with a bright yellow spot each side of the middle.

Inhabits United States.

♀ Head ferruginous, front with a large, black spot, confluent

with another transverse one on the vertex; occiput and throat black; antennæ blackish, beneath rufous; stethidium black, varied with ferruginous, and like the head rough with dense punctures; thorax ferruginous, with a longitudinal black line; scutel ferruginous; feet rufous; thighs black at base; wings dusky, particularly on the margin of the terminal half; tergum rufous, the segments on their posterior margins, and the basal segment at base also black; second segment with a large, lateral, yellow spot, and a slight appearance of another on each side of the third segment.

Length rather more than three-tenths of an inch.

This species varies in having the thorax black, with four ferruginous lines.

#### EPEOLUS Latr.

1. *E. LUNATUS*.—Tergum with two opposite lunules on the first segment, and three bands on the other segments. [355]

Inhabits Missouri and Prairie du Chien.

♀ Body black; front with a whitish spot surrounding the base of each antennæ; antennæ black-brown, three basal joints and labrum ferruginous; thorax with two abbreviated, whitish longitudinal lines before the middle, a pale yellowish line on the collar, another over the wings, passing round behind above the scutel, a double line beneath the scutel, and an oblique sagittate spot each side on the metathorax, also pale yellowish; wings a little fuliginous; feet rufous; thighs blackish in the middle; tergum velvet-black: first segment with an angulated lunule

Inhabits Middle States.

♀ Body deep black, densely punctured; front with a white spot surrounding the base of each antennæ; antennæ black-brown, three basal joints and mandibles rufous; thorax with the collar, obsolete line over the wings, dilated posterior teeth and scutel, ferruginous; wings dusky on the terminal margin; feet rufous; tergum black-brown; two distant bands on the first segment, of which the first is obsolete, and the other is interrupted in the middle, second [356] and third segments each with a band on their posterior margins, pale yellow; remaining bands indistinct.

Length from three-tenths to nearly seven-twentieths of an inch.

Much smaller than the preceding, and about equal in size to *E. mercatus* Fabr., from which it differs by various characters, and particularly by the much more dilated form of the posterior thoracic teeth. During rainy or windy weather, this insect secures itself to the edge of a leaf or to the small branch of a bush, by its mandibles, retracts the feet to the body, and projects the antennæ forwards.

### ORDER DIPTERA.

#### ANOPHELES Meig. Wied.

A. 4-MACULATUS.—Pale brownish; wings with four fuscous spots.

Inhabits North-west Territory.

Thorax dull cinereous; two oblique, brown lines confluent behind and reaching the posterior edge; a broad, lateral, brown line also extending the whole length of the thorax; wings hyaline, the nervures hairy, forming two blackish spots near the middle, placed longitudinally; and two others nearer the tip on the bifurcations of the nervures, placed transversely; scutel dull ochreous, dusky in the middle; feet black-brown, incisures at tip of the thighs and of the tibiæ, yellowish; tergum whitish, a little varied with dusky.

Length ♀ to the tip of the wings more than three-tenths of an inch. [357]

Closely allied to the *maculipennis* Hgg. I have not seen the male. Wiedemann informs me that my *Culex punctipennis* is a true *Anopheles*, an observation which I have found to be correct.

I described that insect in the year 1819, before any account of that new genus had reached this country, otherwise I certainly should have adopted it.

#### LASIOPTERA Meigen.

*L. VENTRALIS*.—Body blackish-brown; antennæ 18-jointed, hairy, joints subglobular, rather transverse, and placed close to each other, basal joint whitish; thorax and tergum immaculate; feet whitish, exterior side of the tibiæ blackish; tarsi blackish, first joint very short; venter whitish in the middle; wings with a narrow, blackish, costal margin, which is gradually narrowed to the tip.

♀ Length rather more than one-twentieth of an inch.

I caught this species in the garden of the University of Pennsylvania.

#### CECIDOMYIA Latr.

*C. ORNATA*.—Carneous; wings spotted.

Inhabits Pennsylvania.

Body varies in color from a very pale flesh color to a deep red; antennæ and feet whitish; wings with five or six dusky spots occasioned by the greater density of the hair of the surface in those parts.

Length to the tip of the wings nearly one-tenth of an inch.

This is most probably the prettiest species of the genus; [358] it occurred on a window in Philadelphia on the 18th of September.



A very common little insect, even in Philadelphia. It may be readily distinguished from other species by its more acute wings, as well as by the arrangement of the spots and bands, however obsolete, which exist on these organs.

#### LIMNOBIA Meig.

**L. ARGUS.**—Yellowish-white; head black; wings ocellate and marbled with blackish.

Inhabits North-west Territory.

Antennæ moniliform; thorax pale yellow-piceous, whitish near the neck; wings hyaline, with a double series of large, pupilate ocellæ, those near the tip confused; ultimate nervure furcate; poisers fuscous, at tip white; coxæ whitish; thighs annulate with black near the tip.

Length ♂ ♀ more than three-tenths of an inch. [359]

To this species the name of *ocellata* would perhaps be more appropriate than it is to the Linnæan species of that name, inasmuch as in the latter the ocellæ are epupilate. It is a very pretty insect, and exhibits much singularity in the arrangement of the nervures of its wings, the penultimate and ultimate nervures being connected by a transverse nervure which arises from the tip of the latter. In other respects the distribution of the nervures are similar to that of the *bifasciata* Fabr. Wied.

[This is identical with the European *L. annulata* Linn. (*L. imperialis* Loew; conf. Linn. Ent. 5, tab. 2, fig. 15).—SACKEN.]

#### TIPULA Linn. Meig.

**T. MACULATIPENNIS.**—Cinereous; thighs black at tip, wings dusky with white spots.

Inhabits North-west Territory.

Antennæ yellowish, incisures of the joints dusky; palpi blackish; thorax with two brown, dorsal lines, which are confluent on the anterior margin, attenuated behind, and abbreviated behind the middle; a lateral line slightly interrupted in its middle, and hardly reaching the anterior or posterior margins; scutel dull honey-yellow, with a black line; wings dusky, with a black carpal spot margined with white, three or four white spots along the central nervure, and about as many near the termination of the ultimate nervure; poisers white, dusky at tip; abdomen

blackish; incisures edged with whitish; thighs with a very obvious blackish tip.

Length to tip of the wing ♀ seven-tenths of an inch.

#### PTYCHOPTERA Meig.

P. 4-FASCIATA.—Wings hyaline, with four brown bands.

Inhabits Pennsylvania. [365]

Head and thorax blackish-brown; antennæ, palpi, mouth, and hypostoma, except near the base of the antennæ, whitish; wings with four brown, subequidistant bands, of which the third reaches the inner margin and the others are abbreviated; pleura, pectus, and feet, yellowish white; the incisures of the latter dusky.

Length to the tip of the wings nearly half an inch.

This species is infested by a parasite of the genus *Ocypete*. It occurred in June.

#### TRICHOcera Meig.

T. SCUTELLATA.—Dark fuscous; scutel whitish.

Inhabits North-west Territory.

Palpi blackish; thorax slightly tinged with livid; anterior angles and neck segments dull yellowish-piceous; scutel dull whitish; wings immaculate, whitish at base; poisers white, with a fuscous capitulum; coxæ, and thighs at base, dull yellowish.

♂ ♀ Length of the body three-twentieths of an inch.

Taken in September at the Falls of Kakabikka, beyond Lake Superior. The posterior margin only of the scutel is dull yellowish-white in the male. This species seems to be closely allied

ous; venter blackish, segments dull yellowish on their posterior and lateral margins; abdomen slender at base, gradually dilating behind.

♀ Length rather more than one-fifth of an inch.

The wing nervures are arranged as in *P. baumhaueri* Meig. It is probably closely allied to the *carbonaria* of Bosc, which, however, is described to be altogether of the same form as the *tipuloides* Bosc, to have a black thorax and obscure feet; whereas ours is a much more slender insect than the *tipuloides* as represented by Coquebert.

#### SCIOPHILA Hgg.

1. *S. PALLIPES*.—Brownish-black, with gray short hairs; antennæ and feet whitish.

Inhabits North-west Territory.

Antennæ (at least the two basal joints) yellowish-white; thorax with numerous scattered, short, gray hairs, which are fewer in number and more prominent behind; wings dusky; poisers elongated, yellow-white, at base dusky; feet yellow-white; abdomen with numerous prostrate, short, gray hairs.

♂ Length to tip of the wings nearly one-fifth of an inch.

The nervures of the wings correspond with those of *S. hirta* Hgg.

2. *S. LITTORALIS*.—Pale yellowish; thorax trilineate; abdomen fasciate with fuscous; feet dusky at tip.

Inhabits North-west Territory.

Vertex and a line extending down between the antennæ upon the hypostoma, blackish; antennæ dusky, two basal [362] joints yellowish; thorax with a double, brown, middle line, attenuated and abbreviated behind, and a brown approximate line on each side abbreviated before; a small fascicle of hairs beneath each wing, and a dusky spot over the insertion of each foot; wings immaculate; poisers yellowish-white; abdomen slender at base, gradually dilating towards the tip, dull-yellowish, hairy; incisures and tip dusky; feet dull-yellowish, towards their tips dusky.

Length of the body three-twentieths of an inch.

I obtained this species on the rocky coast of Lake Superior, in a thicket of small bushes. The nervures of the wings corre-

pond with those of *Asindulum punctatum* Latr., excepting that the second nervure is not at all connected with the first nervure, but curves downward at tip and enters the intermediate cellule before the middle, and the ultimate and penultimate abbreviated nervures are distinct; it is a much smaller species than the *fasciata* nob., the nervures of which agree better with the preceding species, but its connecting nervure from the second nervure enters the intermediate cellule at the middle.

3. *S. HIRTICOLLIS*.—Yellowish-white; thorax hairy; tergum black, with pale yellowish bands.

Inhabits North-west Territory.

Head black; hypostoma, mouth and trophi whitish; antennæ black-brown, the four basal joints yellow, with a dark brown spot above on the third and fourth; thorax with rather numerous, somewhat long, black hairs; three dilated, brownish-livid lines, the intermediate one abbreviated and attenuated behind, and the lateral ones attenuated before; wings a little dusky, the intermediate cellule appearing to the eye like a small, black spot; poisers whitish; pleura with a brownish-livid spot over the intermediate and posterior feet; feet dusky towards the tip, the coxæ [363] with strong, black hairs on the exterior side and tip; tergum black, with black, rather long hairs; segments with broad, yellowish hind margins; tip black.

Length of the body three-twentieths of an inch.

The wing nervures resemble those of *S. littoralis* nob., but the abbreviated nervures are very strongly marked; the second ner-

bands more obvious at the costal margin, one of which is near the middle, widely interrupted on the disk, and the other near the tip; metathorax black; feet white-yellow at base, dusky towards the tip.

Length to tip of the wings nearly two-fifths of an inch.

A large and handsome species. The wing nervures agree with those of *Asindulum punctatum* Latr., excepting that the second nervure is continued a short distance beyond its transverse nervure, which latter enters the intermediate cellule at the basal angle.

5. *S. OBLIQUA*.—Pale yellowish; thorax four lined; tergum fasciate.

Inhabits North-west Territory.

[364]

Head black; hypostoma and base of the antennæ yellow; thorax with two oblique, fuscous lines confluent at the middle of the base; and a dilated fuscous line each side, much abbreviated before and hardly reaching the basal edge; wings slightly tinged with dusky, immaculate; poisers white; feet white, dusky towards the tip; tergum, segments with blackish posterior margins; last segments entirely blackish; anal segment yellow.

Length ♂ nearly one-fifth of an inch.

The wing nervures are arranged altogether like those of *Asindulum punctatum* Latr. Closely allied to *S. fasciata* nobis, but may be distinguished by the narrow, oblique lines of the thoracic disk.

#### LEIA Meig.

*L. VENTRALIS*.—Deep black, polished; wings fasciate near the tip, feet yellowish.

Inhabits North-west Territory.

Head a little hairy; palpi and three basal joints of the antennæ yellowish; remaining joints of the latter fuscous; thorax with sparse hairs; a whitish humeral spot; wings hyaline with a dusky band near the tip, which does not reach the thinner margin, and a dusky tinge or line between the ultimate and penultimate nervures; poisers with a fuscous capitulum and yellowish stipes; feet yellowish-white; tarsi dusky; tergum hairy; venter pale yellowish.

♂ Length of the body nearly three-twentieths of an inch, to tip of the wings more than one-fifth of an inch.

This species is closely allied to the *bimaculata* Meig., with which it also corresponds in the position of the stemmata and the arrangement of the wing nervures, even to the dislocation of the superior branch of the inferior furcate nervure. [365]

#### MYCETOPHILA Meig.

1. *M. SERICEA*.—Head and thorax sericeous; the latter dusky, margined with yellowish.

Inhabits North-west Territory.

Head blackish, with a yellowish sericeous gloss; antennæ fuscous, two basal joints and palpi yellowish; thorax sericeous, blackish on the disk, dull yellowish each side and on the anterior edge; wings immaculate, nervures fuscous; poisers and feet yellowish-white; tarsi and spines fuscous, the latter half the length of the first tarsal joint; coxæ yellowish-white, with a few short, black, rigid hairs on the exterior sides and tip, particularly the anterior pair; abdomen compressed, dusky above; sides dull yellowish on the tips of the segments.

♂ ♀ Length to tip of the abdomen one-fifth of an inch.

The wing nervures are arranged as in *M. fasciata* Meig., excepting that there are three abbreviated nervures, as in *M. lateralis* of the same author.

2. *M. MACULIPENNIS*.—Yellowish; thorax trilineate; wings three-spotted.

Inhabits North-west Territory.

A very pretty species; the wing nervures are like those of *M. fasciata* Meig. The antennæ in my specimen are deficient. Found on the coast of Lake Superior in a thick growth of bushes.

SCIARA Meig.

MOLOBRUS Latr.

1. *S. ATRATA*.—Entirely deep black, polished, immaculate; wings dusky, iridescent; nervures dark fuscous; poisers black; thorax in a particular light somewhat pruinose; abdomen opaque, with short black hairs; spines of the tibia rather longer than the transverse diameter of the tibia.

Inhabits North-west territory.

♂ Length to tip of wings less than one-fifth of an inch.

The nervures of the wings agree with those of *S. thomæ* Fabr. This seems to be very closely allied to *S. nigra* Wied., an inhabitant of South Carolina, but the thorax in a particular light exhibits a grayish reflection, a character which Wiedemann attributes to the antennæ only in his species. The antennæ are deficient in my specimen.

2. *S. POLITA*.—Deep black, polished; poisers whitish; feet yellowish at base.

Inhabits North-west Territory.

Body with numerous short hairs which are slightly sericeous; eyes without interval above the antennæ; wings dusky, pale yellowish at base; poisers whitish; feet dusky towards the tip; coxæ and thighs yellowish-white.

♀ Length of the body less than three-twentieths of an inch.

The abdomen and thorax are both highly polished. [367]

3. *S. FRATERNA*.—Deep black, polished; abdomen black-brown, opaque; base of the poisers, and feet pale yellowish.

Inhabits North-west Territory.

Antennæ dark fuscous, with dense grayish hair; eyes in contact above the antennæ; thorax polished; wings dusky, pale yellowish at base; poisers with a yellowish scapus and fuscous capitulum; feet dusky towards the tip; abdomen fuscous, opaque.

♂ Length of the body one-tenth of an inch, ♀ smaller.

4. *S. EXIGUA*.—Black; thorax piceous at the anterior angles; poisers whitish at base; feet whitish, dusky at tip.

Inhabits North-west Territory.

Antennæ fuscous, with dark gray hairs; wings a little dusky nervures fuscous; poisers elongated, whitish, capitulum fuscous; abdomen fuscous, opaque.

♂ Length of the body one-twentieth of an inch.

♀ A little larger, with the base of the feet and of the poisers of a darker shade than those of the male.

#### SCATOPSE.

*S. ATRATA*.—Deep velvet black; tarsi pale; tip of the antennæ abruptly compressed.

Inhabits Pennsylvania.

Body hardly polished and nearly opaque, immaculate; poisers color of the body; wings hyaline; marginal nervures but little more than half the length of the wing, fuscous; furcate nervure attaining the tip; below the furcate nervure are two parallel nervures which do not reach the margin; beneath the latter is the ordinary undulated nervure.

I obtained several specimens which were crawling on the glass of a window, in September, in Philadelphia. The [ 368 ] nervures of the wings differ somewhat from those of the *S. notata*, Linn. Meig.; the marginal nervures do not approach so near the tip of the wing, and instead of a single nervure between the forked nervure and the undulated nervure, as in the *notata*, this species has two.

BIBIO Latr. Meig.



## BERIS Latr.

**B. VIRIDIS.**—Bright green; tergum black-brown; venter pale; feet yellowish.

Inhabits Pennsylvania.

Head brassy-green polished; antennæ obscure yellowish, brownish at tip; proboscis and palpi whitish; stethidium green, polished; scutel with four yellowish spines; wings hyaline; stigmata large, fuscous; nervures fuscous, those of the costal margin anterior to the stigmata whitish; central areola destitute of an abbreviated nervure, two nervures passing off from the tip, and a third from very near its base; poisers white; feet pale yellowish, tarsi dusky at [369] tip, posterior tibiæ fuscous at tip; tergum black-brown, incisures and lateral edge yellowish; venter pale yellowish, dusky at base.

Length to the tip of the wings one-fourth of an inch.

This species seems to be allied to the *tibialis* of Europe, but the posterior tibia are not very obviously clavated, the central cellule of the wings is destitute of the small abbreviated nervure, and the inferior of the three nervures which radiate from this cellule issues out very nearly from its base, and not from the inferior middle as in that species.

## ODONTOMYIA Meig. Latr.

**O. VERTEBRATA.**—Black; abdomen white, with dorsal black spots.

Inhabits North-west Territory.

Mouth deep black, pale within; hypostoma with an elevated testaceous knob; antennæ deep black, terminal joint beneath dusky testaceous; thorax blackish, with hardly perceptible hairs; scutel dull testaceous, black at base; tip a little hairy; spines horizontal, white; wings white; poisers white, with a whitish-glaucous capitulum: feet yellowish-white; abdomen subquadrate, much depressed, white; tergum with a series of large black spots almost connected together.

Length ♂ rather more than three-tenths of an inch.

## COENOMYIA Latr. Meig.

**C. PALLIDA.** [Ante p. 42.]

## THEREVA Latr.

[370]

T. FRONTALIS.—Black; thorax with two yellow vittæ; tergum annulate with yellow.

Inhabits North-west Territory.

Head beneath with white hair; antennæ, proboscis, and palpi black; front and vertex dusky yellowish, with a large, deep black, glabrous, polished, transverse, undulated spot; thorax black, with two yellow lines, or yellow with three black lines; wings hyaline, tinged with dull yellowish; nervures fuscous, slightly margined, and with a carpal spot; scutel yellowish, with a dusky basal spot; tergum glabrous, polished, the posterior margins of the segments bright yellow, wider upon the sides; pleura and pectus glaucous, the latter hairy; poisers whitish; with a blackish capitulum; feet black; tibia excepting at tip dull testaceous; venter cinereous, changeable, second and third segments with yellowish posterior margins.

Length more than half an inch.

[ 371 ]

## ANTHRAX Latr.

1. A. ALCYON.—Wings brown, a hyaline spot near the middle, another at tip in which are two curved brown lines.

Inhabits North-west Territory.

Body black, with pale fulvous hair; head yellowish-white, hairs above the antennæ black; tip of the hypostoma prominent, and with black rigid hairs; antennæ black, basal joint yellowish with black hairs; vertex black; occiput with a very profoundly impressed line above; scutel piceous; wings dusky, pale brown on the disk, an obsolete, small, subhyaline spot between the middle and tip, a large, subtriangular, hyaline spot near the tip, cut off by a nervure; tip with a few radiated ner-

last segments black on the disk; tergum with blackish hair on the incisures.

Length nearly eleven-twentieths of an inch.

This species seems to approach nearest to Wiedemann's fifth tribe, though the additional cellule will justify its being placed apart; we observed it frequently on St. Peter's river and on Red river.

2. *A. TEGMINIPIENNIS*.—Black with pale fulvous hair; wings brownish-black, immaculate. [372]

Inhabits North-west Territory.

Head yellowish-white below the antennæ; hypostoma prominent, with a few rigid black hairs at tip; antennæ black, basal joint whitish, with black hair; front dull fulvous; vertex black; wings entirely brownish-black, without spot; feet pale rufous; tarsi black; tergum with black hairs at the incisures, which on the side alternate with the fulvous ones, but more distinctly so near the tip.

Length from nine-twentieths to half an inch.

This species belongs to Wiedemann's fifth tribe.

3. *A. FULVIANUS*.—Black, covered equally with pale yellowish hair; wings hyaline, with a narrow, brown, costal margin.

Inhabits North-west Territory.

Head with dull yellowish, short hairs, intermixed with black ones on the front and hypostoma; thorax densely hairy; wings hyaline, interval between the two nervures of the costal margin, and base to the first transverse nervure, light brown; feet black, sericeous, with yellowish-fulvous hair, intermixed with black hairs; tergum covered with dense hair, without any intermixture of black hairs, and without any fasciated appearance; venter each side behind with hairs of a brighter fulvous tint than the others.

Length more than nine-twentieths of an inch.

Allied to *A. hottentota* Fabr.

Belongs to the fifth tribe in Wiedemann's arrangement. It is common on St. Peter's river, at Pembina, &c. It is closely allied to *alternata* nob. in the characters of the wing, but there is no sign of fascia on the tergum, nor of alternating black fascicles of hair on the sides. The color of the hair on the last segments

of the venter is sometimes ferruginous, but it is always of a deeper tint than that of [373] other parts of the body. It seems to vary in size, I have a specimen less than one-fourth smaller.

4. *A. FASCIPENNIS*.—Black, slightly hairy; wings varied with blackish and hyaline.

Inhabits Red river of Winnepeek.

Body deep black, hairs sparse, very short, ferruginous; head with black short hairs above, and between, the antennæ; sides of the mouth whitish; hypostoma with dull, yellowish-ferruginous hairs; posterior orbits with silvery hair; thorax with long hairs before the wings; scutellum margined with piceous; wings with a wide, blackish-brown costal margin from which proceed two oblique bands; the basal one is dilated and attains the thinner margin, on which it extends from the middle of the basal curve of the wing to the extremity of the first and second nervures; the second band is irregularly arcuated and is abbreviated near the thinner margin where it terminates in the form of a hook; on the costal margin near the tip is an oblique spot connected with the costal colored margin; poisers fuscous; capitulum white at tip; tergum with the second and third segments obscurely piceous each side; venter whitish at base; feet dusky; tibia pale.

Length one-fourth of an inch.

This species coincides with the third tribe in Weidemann's arrangement of this genus. It is small, and the wings are prettily variegated. The specimen I obtained is remarkably destitute of

of the wing, blackish; feet black; poisers fuscous, capitulum whitish.

Length more than three-tenths of an inch.

The disposition of the wing nervures of this species corresponds with that of the fifth tribe in Wiedemann's arrangement.

#### LAPHRIA.

1. *L. POSTICATA*.—Black; thorax and before the tip of the tergum covered with yellow hair.

Inhabits North-west Territory.

Antennæ, hair of the vertex and of each side of the antennæ, black; long hair beneath the antennæ yellowish; hair of the cheeks long, white; thorax covered with yellow hair, immaculate; pleura and pectus black, the latter with long whitish hair between the feet; poisers yellowish-white; wings dusky; tergum blue-black, polished, with black hairs each side; two last segments and posterior margin of the preceding segment covered with yellow hair; venter polished, immaculate.

Length three-fifths of an inch.

2. *L. FLAVICOLLIS*.—Black; wings dusky; hair of the head and thorax yellow.

Inhabits North-west Territory.

Head with long yellow hairs, and a few black ones over the mouth; proboscis, antennæ, and palpi black, the latter with hairs; thorax thickly clothed with yellow hair, immaculate; wings dusky; nervures fuscous; poisers [375] dark reddish-brown; feet with black hair; a few pale hairs on the basal half of the thighs, and many about the origin of the feet; tergum black, with a slight shade of blue, polished, and with black hairs.

Length more than half an inch.

This species resembles the *thoracica* Fabr., but may be distinguished by the color of the hair of the head; it is also a smaller insect, with a more slender form.

#### ASILUS.

A. *ABDOMINALIS*.—Black; hypostoma silvery; tergum fulvous in the middle.

Inhabits North-west Territory.

Head rather small; antennæ elongated, second joint very small; hypostoma bright silvery; mystax sparse, rigid, black; thorax with minute black hairs, and a few longer ones on the margin; wings broad, black; tergum, segments, excepting the basal one and two terminal ones, reddish fulvous.

Length more than three-fifths of an inch.

The styles of the antennæ being lost in the specimen, I am not certain that this species is correctly arranged when placed in this genus. It will not agree with *Dioctria*, as the antennæ are perfectly sessile, nor with *Dasygogon*, as the basal joint of the antennæ is nearly four times the length of the second joint. The rectilinear posterior tibiæ will not authorize its reference to *Laphria*. The appearance of the pectus and the adaptation of the feet are precisely as in *Asilus*. In the arrangement of the wing nervures it agrees with Wiedemann's first tribe.

[Wiedemann has changed the name to *Acacus* because the insect belongs to *Dasygogon*, and Say had already described another under the same specific name, (*Discocephala abdominalis* Say, Jour. Acad. Nat. Sc. 3, 50). The present species belongs to *Stenopogon*.—SACKEN.]

#### HEMERODROMIA Hgg.

[376]

*H. SUPERSTITIOSA*.—Whitish; thorax with a broad, blackish-brown vitta; tergum with a broad black vitta, which is crenate on its edges.

Inhabits North-west Territory.

Antennæ, proboscis, and front white; occiput and inferior part

## SARGUS Latr. Meig.

1. *S. DECORUS*.—Front blue; thorax green; tergum greenish golden; feet pale yellow.

Inhabits Pennsylvania and East Florida.

Hypostoma and vertex blackish; proboscis yellow; antennæ dusky yellowish; third joint darker; frontal tubercles with a white reflexion; wing dusky, stigma distinct; poisers pale yellow; pleura blackish-piceous; feet yellow; posterior tarsi dusky; abdomen slender, widest at tip, gradually [377] attenuated to the base, and with pale yellowish-brown hair.

Length about three-tenths of an inch.

This species is very closely allied to the *S. auratus* Meig. Fabr., but it is smaller, and the feet are dissimilar; it may, however, prove to be a variety of that species.

2. *S. DORSALIS*.—Black, eyes brassy, with a green line; feet white, tibiæ and tarsi above blackish.

Inhabits Kentucky.

Stemmata approximate on the vertex; eyes brown, when recent brassy-green tinged with red or purplish, a broad, green, longitudinal line across the middle; antennæ whitish at base; feet white; tarsi black at the tip; anterior and posterior tibiæ black above; wings dusky nervures deep brown, carpus distinctly marked by an oblong, opaque, brown spot; abdomen oval, middle of the two or three basal segments of the tergum and venter whitish.

Length of ♀ one-fifth of an inch, ♂ rather less.

The male is very similar to the female, but is a little smaller.

This species is allied to the genus *Vappo* Latr., by the nervures of the wings, the nervure between the three which radiate from the central joint being altogether wanting, but the second joint of the antennæ resembles that of a *Sargus*, the third joint is deficient in my specimen. In general form it resemble *S. politus* Linn.

[Is a *Beris* according to Wiedemann.—SACKEN.]

## PARAGUS Latr.

♂. 4-FASCIATUS.—Black; tergum with four yellow bands; costal margin of the wings fuscous.

## Inhabits North-west Territory

Head pale yellowish; hypostoma slightly impressed with a black line, and another dilated black line downwards (378) from the black vertex and includes the superior portion of the tubercle of the antennae; mouth each side black, antennae blackish-piceous, basal joint and arca paler; second joint decidedly longer than the first; eyes with two yellow bands of which the anterior one is irregular; occiput black, with a cinnereous orbital line thorax with four yellow spots on the anterior margin an obsolete, yellowish, curved line above the wings terminating anteriorly in a transverse, whitish spot on each side of the coxae an angulated yellow line behind, pleurae with two yellow spots placed vertically, costal edged with yellow, wings hyaline a ferruginous costal margin, ferruginous at base and gradually diluted towards the tip, posterae white, feet white, anterior pair with the anterior half of the thighs and tibiae and all the tarsi black, intermediate pair with the tip of the thighs of the tibiae, and all the tarsi pale rufous, posterior pair hairs beneath, with a tooth near the tip and posterior half black, tarsi and tip of the tibiae pale rufous, the latter arcuated, tergum with a band near the base somewhat narrowed in its middle, another narrower one on the middle and two near the tip a little broader in their middle yellow, venter with about three distant, narrow yellow bands of which the middle one is sometimes fulvous

Length less than three-fifths of an inch.



Descriptions of North American Curculionides and an arrangement of some of our known species agreeably to the method of Schoenherr.\* July 1831.

### BRUCHUS Fabr.

1. *B. 4-MACULATUS*, F. Oliv.—Fabricius says it inhabits the island of Santa Cruz, and Olivier says it is from Carolina. The only individual I have seen was found by Mr. Barabino at New Orleans.

Olivier gives its length at three-twentieths of an inch. The present specimen is considerably over one-tenth, but is less than three-twentieths.

2. *B. OBTECTUS*.—Dusky; base and tip of the antennæ feet and abdomen obscure rufous.

Inhabits Louisiana.

Body above blackish; with prostrate, somewhat dense, dull yellowish hairs: antennæ gradually thicker to the tip, basal half and terminal joint dull rufous, second joint nearly as long as the third: thorax with numerous, distant punctures; elytra immaculate, the striæ distinct; apical margin obsolete rufous; beneath black, with prostrate hair; feet dull rufous; posterior thighs somewhat dilated, beneath blackish with a tooth near the tip and about two small ones nearer the tip; abdomen dull rufous, immaculate.

Length less than three-twentieths of an inch.

3. *B. TRIANGULARIS*.—Black; elytra with a triangular band, in which is a black spot each side.

Inhabits Mexico.

\*I am greatly indebted to this distinguished naturalist for his able work the "Dispositio Methodica Curculionidum" as well as for a knowledge of several unpublished genera of this family; my thanks are also due to Germar who has kindly furnished me with his "Coleopterorum species novæ aut minus cognitæ descriptionibus illustratæ," in which many new genera are instituted.

[The very unnatural classification of Schönherr has left this family in such an unsatisfactory condition so far as regards the identification of genera, that I have not yet attempted a critical study of our species. My notes on this paper therefore will be meagre and more imperfect than in other portions of the work.—Lac.]

Body black; antennae rufous at base; thorax transverse; elytra with slender, deep, punctured stria; a common, large, triangular white band, connected along the suture with the other scutal and attenuating to the lateral edge; in the middle on each side of the suture is a black dot, posterior tibiae with a spine beyond which are two smaller spines.

Length nearly three-twentieths of an inch [2].

Easily distinguished by the common white triangular band of the elytra marked by two black spots. I had three specimens from Mexican seeds of the size of those of *Palmetto*, but common within.

3 B. MUR'S Brown, varied with black lines and rugosities. Inhabits Indiana.

Body light brown, variegated; antennae pale rufous, thorax much narrowed before, with two interrupted, elevated, black lines and one or two on each side, base rather prominent at the central scutal whitish apparently blind; elytra with black spots and abbreviated lines, which have a whitish spot at their anterior tip, a light brown line curves inwards from the humerus and passes along the third interstitial line towards the tip, brownish dusky or blackish; feet pale rufous; posterior tibiae blackish beneath with several minute spines and four or five larger ones near the tip; posterior tibiae blackish, subfemorate beyond the middle; palpi yellow.

Length less than three-twentieths of an inch.

The anal segment is more nearly horizontal than any species I have seen.

6. *B. OBSOLETUS*.—Blackish, varied with cinereous hair.

Inhabits Indiana.

Body blackish cinereous, with a slight tinge of brown: antennæ not deeply serrate: thorax much narrowed before, [ 3 ] cinereous each side, a slight impressed dorsal line; base with the edge almost angulated, central lobe almost truncate; scutel quadrate, whitish, longitudinally divided by a dusky line; elytra with the interstitial lines having a slight appearance of alternating whitish and dusky; on the middle of the third interstitial line is a more obvious abbreviated whitish line: posterior thighs with a black spine, and two smaller ones.

Length over one-tenth of an inch.

The whitish or cinereous markings are not very striking; on the elytra they may sometimes be traced into two obsolete macular bands. I obtained many specimens from the seeds of an *Astragalus* in August, in company with *Apion segnipes* nob.

7. *B. MUSCULUS*.—Blackish with cinereous hair; antennæ and feet rufous.

Inhabits Indiana.

Body blackish-cinereous, with a slight tinge of brown, or black with cinereous hair: labrum piceous: antennæ rufous at base and tip, piceous in the middle: thorax rather long, narrowed before, somewhat cinereous each side, and on a dorsal line; basal edge lobed at the scutel: scutel quadrate cinereous, with a dusky line; elytra, third interstitial line with an abbreviated cinereous line on its middle; feet rufous; anterior thighs at base, intermediate pair to the middle, black; posterior thighs with a spine, and three close set smaller ones distant from it, and with their tibiae black.

Length less than one-tenth of an inch.

Resembles *obsoletus* nob., but is a little smaller, and the rufous antennæ and feet distinguish it.

8. *B. TRANSVERSUS*.—Black, with cinereous hair; interstitial spaces with transverse black lines.

Inhabits Indiana.

Body black, more or less covered with cinereous hair; head

black : antennæ rufous : thorax transverse, widely rounded before, with a scutellar lobe : scutel subquadrate with a dusky line : elytra, interstitial spaces interrupted by transverse black lines : feet rufous : posterior thighs black at base, armed with a spine near the tip.

Length over one-tenth of an inch.

ANTHRIBUS F. Sch.

[4]

Subgenus TROPIDERES Sch.

1. *A. CORNUTUS*.—Thorax with five tubercles.

Inhabits Indiana.

Head white: mandibles piceous: antennæ rufous, clava fuscous : rostrum moderate : eyes distant : thorax with two fascicles of erect hairs on the anterior edge, and three larger ones placed transversely on the middle ; elytra somewhat variegated, with several fascicles of erect hairs on the interstitial lines ; and a white, double, common, transverse spot before the middle ; feet hairy.

Length less than one-fifth of an inch.

[This is *A. coronatus* Sch.—LEC.]

Subgenus PHAENITHON? Schön.†

2. *A. BREVICORNIS*.—Antennæ short; scutel and alternate spots on the elytra, whitish.

Inhabits Mexico.

Body black-brown : head covered with prostrate whitish hair : antennæ hardly longer than the head, fuscous ; thorax with a

## ATTELABUS F. Sch.

A. PUBESCENS nob. Jour. Acad. Nat. Sci. Vol. 5, p. 252.

A. *Rhois* Boheman Acta Mosqu.

## RHYNCHITES Herbst. Schönh.

1. R. COBLARIS Fabr.—The three ultimate joints of the antennæ are elongated, differing in this respect from the other species of the genus; it has been separated under the generic name of *Sapindus*.

The species varies so much in color as to have given rise to several specific names, viz.:

*Anthrribus collaris* Fabr. Syst. Eleut.

*Rhynchites angustatus* Herbst.

[5]

*Rhynchites rubricollis* nob., Journ. Acad. Nat. Sci,\* and Melsh. Catal.

*Rhynchites nigripes* Melsh.; *quercus* Knoch. in Melsh. Catal.

*Rhynchites ruficollis* Germar, Sp. Nov. p. 188.

The latter is very remarkable in having the thorax of the same color as the elytra. Dejean in his Catalogue places the species in the genus *Rhinomacer*.

[Is *Eugnamptus angustatus* Sch.—LEC.]

2. R. HIRTUS Fabr.

*R. æneus*? Bohemann.

Doubts have been expressed of our insect being the *hirtus* of Fabr., but it agrees better with the description than any. It is also, as Fabricius says, of the stature and magnitude of *R. pubescens*.

3. R. ERATUS.—Brassy, antennæ, rostrum, and beneath, obscure bluish.

Inhabits Pennsylvania.

*Curculio æratus* Knoch, in Melsh. Catalogue.

Body brassy, punctured: rostrum very slightly dilating towards the tip, with an impressed line above, from the base to the middle: front with small punctures: thorax with dense punctures: elytra with a transverse, dilated but not profound, com-

\*This reference is wrong, it is described in Long's Expedition, 2, 288: ante. p. 192.—LEC.]

mon indentation : with striæ of transverse, large punctures : beneath blackish-blue.

Length nearly one-tenth of an inch.

This is the smallest North American species yet known.

I have found it on the oak in June.

#### Genus PTEROCOLUS Sch.

Antennæ 11-jointed, not geniculate ; basal joint not much elongated ; eighth joint transverse linear ; ninth and tenth transverse subquadrate, dilated, and with the ultimate semioval one remote, perfoliated, forming an oblong oval club ; rostrum dilated at tip : head rather long behind the eyes, neck not contracted ; scutell transverse subquadrate : elytra somewhat abbreviated ; each rounded at tip, depressed above : podex and part of the back, naked : feet robust : thighs unarmed, dilated ; tibiæ unarmed, ciliate densely on the exterior edge with very short spines, and with small spines around the edge of the tip : body rounded.

This genus differs from *Rhynchites* by the rounded form of the body ; the shorter and depressed elytra, more divaricate [6] at their tips ; the rostrum is shorter and more contracted in the middle, and the origin of the antennæ is nearer the middle or rather the base of the rostrum ; the tibiæ are ciliated with short spines, &c.

*P. ovatus* Fabr. (*Attelabus*) Syst. Eleut.

#### APION Herbst.

*A. rostratum* nob. Journ. Acad. Nat. Sci.

chanters and knees black ; tibiæ black at tip ; tarsi black with a whitish reflection at the tip of their joints.

Length about one-tenth of an inch.

I obtained numbers of this species from the seeds of an *Astragalus* in August.

#### LÆMOSACCUS Sch.

*L. PLAGIATUS* Fabr. Schönh. ; *Curculio nephele* Herbst.

This is a well marked insect, remarkable by the very large fulvous mark on the disk of each elytron occupying two-thirds of the whole surface. The tooth of the anterior thighs is very prominent. I obtained it on the oak in July.

#### THAMNOPHILUS Schönh.

1. *T. BARBITUS*.—Body rather long and narrow, blackish-brown, with confluent punctures : rostrum punctured, cylindrical, as long as the head and thorax, slightly broader at tip, a little curved ; thorax with one or two slight tubercles each side before : elytra with the striæ rather wide and deep, punctured ; thighs with a tooth beneath.

Inhabits Pennsylvania.

Length to the tip of the rostrum three-tenths of an inch.

Belongs to the Subgenus *Panus* Schönh.

[Placed by Schönherr in *Magdalinus* to which also belong the following four species.—LEC.] [7]

2. *T. OLYRA* Herbst (*Curculio*) Natursyst. vol. 7, p. 7.

The scutel is white ; this character was probably obliterated in Herbst's specimen as he has not mentioned it.

3. *T. ARMICOLLIS* nob. (*Rynchænus*) Journ. Acad. Nat. Sci. vol. 3, p. 312.

4. *T. PANDURA*.—Thorax with a lateral tubercle before the middle and on the posterior angle ; tarsi piceous.

Inhabits United States.

*Curculio pandura* Knoch in Melsh. Catalogue.

Body black, punctured : antennæ piceous : rostrum slightly arcuated : thorax with separate punctures ; an angle or tubercle each side a little before the middle, contracted before the pos-

terior angles, which are prominent: elytra with striæ of large punctures: tarsi rufo-piceous.

Length over one-tenth of an inch.

Much like *T. olyra*, but is much smaller, the lateral thoracic tubercle is nearer the middle and scutel is black.

5. *T. PALLIDUS*.—Pale yellowish; head and thorax tinged with rufous.

Inhabits Indiana.

Body punctured, somewhat elongate; head densely punctured, punctures not profound; rostrum a little dilated towards the tip, punctured: club ovate acute, not much elongated: thorax with dense, irregular, not very deep punctures, a dorsal glabrous line, and anteriorly on each side is an acute tubercle: elytra with impressed striæ in which are oblong punctures; interstitial lines a little convex and slightly rugose with a very minute series of scales or pores, near the tip these lines are more convex, basal edge somewhat elevated: thighs, spines acute; postpectus and base of the abdomen dusky.

Length to tip of rostrum about three-twentieths of an inch.

The color is much paler than that of the *armicollis* nob. and the club is much shorter.

#### CHLOROPHANUS Dalm.

*C. ACUTUS* nob. (*Curculio*) Journ. Acad. Nat. Sc. vol. 3, p. 310.

This insect also occurs in Indiana.

[8]



## Genus THECESTERNUS nob.

Anterior part of the pectus excavated for the reception of the rostrum.

*Natural character.*—Body convex, firm, unequal: rostrum very short, thick, entire: antennæ rather slender, inserted near the middle of the rostrum, in a deep, somewhat angulated groove; first joint oblong turbinate, a little arquated; second and third short, subtrubinate, the latter shorter; fourth and eighth very short, quadrate or transverse; club rather large, of which the basal joint (or two joints?) is as long again as the ultimate one, which is subacute: eyes a little oblique, somewhat acute before, oblong subovate: thorax longitudinally somewhat quadrate: scutellone: elytra connate, rigid, hardly broader at base than the thorax, narrowed at tip and concealing the podex: pectus anteriorly deeply excavated to receive the rostrum: feet, anterior pairs approximate: posterior pair distant: thighs not dilated: tibiæ with a short, thick, or double spine at tip: tarsi simple.

*Obs.*—I proposed this genus when describing the species, but omitted the name. It differs from *Brachycerus* F., and *Episus* Billb. by the pectoral excavation, general form of the body, less robust antennæ, and larger club.

T. HUMERALIS nob. (*Brachycerus*,) Journ. Acad. Nat. Sci. Vol. 5, p. 254.

[This is] the type of *Lithodus* Germ. Sch. Curc. 2, 420.—LEC.

## GRAPHORHINUS Sch.

1. G. VADOSUS.—Body dark cinereous: rostrum with a deeply impressed line, on each side of the middle of which is a short impressed line, and between the eyes is a dilated, suborbicular indentation: thorax with large, somewhat irregular, approximate punctures: elytra with the alternate lines more elevated, particularly towards the base; punctures transverse. [9]

Length less than two-fifths of an inch.

Inhabits Missouri.

This insect was presented to me by Nuttall.

[Belongs to *Epicaerus*.—LEC.]

2. *G. OPERCULATUS*.—Rostrum obsoletely truncated ; a frontal dilated puncture.

Inhabits Mexico.

Body black, covered with minute, orbicular, perlaceous scales : head with a dilated impressed puncture between the eyes, an obsolete longitudinal sulcus on the short, robust rostrum and a still less obvious one on each side ; thorax canaliculate in the middle ; elytra with series of rather large impressed punctures : thighs with a sinus beneath near the tip.

Length over seven-twentieths of an inch.

#### DERACANTHUS Schönh.

##### Subgenus ARACANTHUS.

D? *PALLIDUS*.—Body whitish, varied with pale brown ; rostrum not longer than broad, with an impressed, very obvious line from the vertex to the tip : eyes small : thorax with numerous, small punctures not close set nor very regularly placed ; base not undulated : elytra with regular striæ of punctures.

Inhabits United States.

Length over one-tenth of an inch.

#### THYLACITES Germ.

1. *T. MICRUPS*.—Body whitish : rostrum very short and broad : eyes very small, orbicular ; front with an acute impressed line : vertex and thorax a little rough with numerous slight indentations ; scutel not obvious : elytra with their striæ and punctures not

## TANYMECUS Germ.

1. *T. LACAENA*.—Body a little cupreous, dull yellowish cinereous, densely punctured: rostrum with a raised line, tip widely indented above: antennæ blackish rufous: thorax with three obsolete blackish vittæ; widest a little before the middle: scutellum very small, cinereous: elytra with the striæ hardly impressed at base but obviously impressed towards the tip, punctures rather large, quadrate; interstitial lines flattened, tip of each with a short joint in the middle.

Length to tip of rostrum three-twentieths of an inch.

*Curculio lacaena* Herbst? Natursyst.

2. *T. CONFUSUS*.—Much like the preceding but is destitute of the thoracic vittæ.

Length to tip of the rostrum about three-tenths of an inch.

[Appears to be *T. confertus* Sch.—LEO.]

## APHRASTUS Schönh. (in litt.)

*A. TAENIATUS* nob. Journ. Acad. Nat. Sc.

Elytra whitish, second and fourth interstitial lines light brown. [10]

## SITONA Germ.

1. *S. INDIFFERENS*.—Body black, rather thinly covered with cinereous hair: rostrum short, dilated, with an indented line which does not reach the tip: thorax cylindrical with small, irregular, hardly impressed punctures: elytra striate, the striæ with rather large punctures: feet obscure piceous.

Inhabits Missouri.

Length three-twentieths of an inch.

In form somewhat like *lineellus* Gyll.

2. *S. SCISSIFRONS*.—Covered with white scales; elytra with black spots.

Inhabits Missouri.

Body entirely covered by minute scales, which on the sides of the thorax and elytra are white, and on their middle light brown; head obviously punctured and with a widely impressed line extending to the tip: antennæ dark piceous; basal joint paler, clavate: thorax rather short, slightly rounded each side, obviously

punctured: a much dilated brown dorsal vitta in which is a narrow white vitta, a lateral brown vitta from the eye: elytra with a much dilated common brownish vitta; a few blackish spots; tibiæ with a slight rufous tinge: tarsi spongy beneath: eyes rounded.

Length less than one-fifth of an inch.

This much resembles the *S. lineellus* Gyll., but the nasal joint is shorter, the eye smaller, the thorax shorter, &c.

#### HADROMERUS Schönh.

**H. HILARIS.**—Brown varied with cinereous: rostrum with a deeply indented line: antennæ and tarsi rufous: thorax and head with numerous deep punctures; the former with a dilated lateral vitta: elytra with an oblique cinereous arquated vitta from the humerus to the middle; tip cinereous almost constituting a band; beneath with whitish scales: feet somewhat banded.

Length one-fifth of an inch.

*Curculio hilaria*? Herbst. Natursyst.

The male is smaller and the extremity of the oblique vitta is almost insulated so as to form a small spot in the middle of each elytra, surrounded by a dark line.

[Belongs to *Pandeleteius* Sch.—LEC.]

#### CLEONUS Schönh.

**C. TRIVITTATUS.**—Covered with cinereous hair; thorax trilineate, elytra, suture and vitta on each blackish.

Inhabits Arkansaw.

*Lixus trivittatus* nob. Jour. Acad. Nat. Sci. [Wrong reference.—LEC.]

Body black, densely covered by cinereous hair; head, a black line from the eyes to the tip of the rostrum, and a carinate line on the vertex and widely indented behind; three longitudinal, slightly

## HYPSONOTUS Germ.

1. *H. ALTERNATUS*.—Body piceous, nearly covered with prostrate brown hairs: elytra with the striæ simple impressed, the hairs upon them forming alternate whitish and brownish spots; a more obvious white spot near the tip of each elytron; front and rostrum with an impressed line; thorax with the punctures [11] large and close set, concealed by the hairs, with a longitudinal raised line; thighs beneath near the tip emarginate.

Length less than half an inch.

Inhabits the North-west Territory.

[Belongs to *Atophus*.—LEC.]

2. *H. IMBRICATUS* nob. (Liparus) Journ. Acad. Nat. Sc.

[Is an *Epicaerus* according to Schönherr.—LEC.]

## LISTRODERES Schönh.

1. *L. CAUDATUS* nob. (*Rynchaenus*) Journ. Acad. Nat. Sc.

2. *L. SQUAMIGER*.—Body covered with minute brownish cinereous scales: rostrum with a carinate line; thorax with scattered punctures; not flattened; scutel yellowish or whitish, elytra with punctured striæ towards the tip concealed by the scales; the united tip obtusely rounded; humerus obtuse.

Length from two-fifths to half an inch.

Inhabits Arkansas.

Much like *cnulatus* nob., but in that species the humeral line is carinate and acute.

3. *L. PORCELLUS*.—Body blackish rufous, with numerous short, robust, upright hairs; rostrum broad and rather short, with somewhat elevated lines and wide indentation at base: thorax subcylindric: elytra with a wide impressed striæ, in which are transverse punctures; a paler submarginal line each side and terminal spot; feet dull rufous.

Inhabits United States.

Length over one-tenth of an inch.

4. *L. SPARSUS*.—Body dull drab color; with minute scales, the surface with small, dense, shallow indentations; numerous short, robust, upright hairs; rostrum robust, short; antennæ rufous: thorax somewhat rounded; scutel small, transverse:

elytra with rather longer hairs than the thorax, with slender punctured striæ, punctures obsolete towards the tip; humerus a little prominent, somewhat carinate; feet unarmed.

Inhabits Missouri.

Length over three-twentieths of an inch.

5. *L. LINEATULUS*.—Body with a dirty yellowish cinereous covering, and with short, robust hairs; rostrum with two longitudinal grooves; antennæ rufous; thorax rounded, with a transverse indented anterior line and a longitudinal obsolete, impressed one: the whole surface has a granulated appearance; elytra with the striæ and punctures concealed by the covering, the alternate interstitial lines prominent and distinct.

Length over one-fifth of an inch.

Very distinct from the preceding species and may be distinguished from them by its much smaller size.

#### BARYNOTUS Germ.

1. *B. RIGIDUS*.—Body dirty brown, with remote, robust, upright hairs: rostrum short, thick, transversely indented between the eyes; thorax a little indented longitudinally; transverse, as broad in the middle as the base of the elytra; elytra with the striæ obtuse, slightly impressed, punctured; interstitial lines having the hairs distant and regular.

Inhabits Connecticut.

Length less than one-fifth of an inch.

[*Phyxelis rigidus* Sch. Curc. 7, 124.—LEC.]

? *B. BRUNNEUS*.—Rather slender; thorax rounded, some

The mandibles are naked and very prominent; the thorax is rounded and its surface is rough and punctured.

[Is the type of *Panscopus* Sch.—LEC.]

3. *B. GRANULATUS*.—Brown, thorax obtusely granulated and with a pale vitta.

Inhabits Indiana.

Body dull brown with short raised hairs: head impressed between the eyes: thorax with very obtuse granulations, a longitudinal slender impressed dorsal line in a dull yellowish vitta: elytra a little elevated on the basal edge, striæ concave, much dilated, punctured; punctures wide, not very deeply impressed, interstitial lines not so wide as the striæ, with hairs; suture a little pale.

Length about one-fourth of an inch.

The surface of the thorax exhibits the appearance of obtuse little elevated granulations and the profile view shows irregular punctures or interrupted rugæ.

#### LEPYRUS Germ.

*L. GEMINATUS*.—Body dusky: rostrum rather short: antennæ a little robust: thorax with a yellowish vitta each side: elytra with the alternate interstitial lines light brown, a small white spot in the middle of each.

This is the analogue of the *L. colon* F. of Europe, and so closely allied to it as to be easily mistaken for it. But the body is a little more robust; the rostrum is a little shorter and the antennæ are more robust.

A specimen was sent to me by Mr. Barabino from Louisiana, I obtained one in Missouri.

#### HYLOBIUS Germ.

*H. PALES* Herbst; *Pissodes macellus* Germar Sp. Novæ, p. 319.

#### PHYTONOMUS Schönh.

*P. TRIVITTATUS*.—Blackish brown with numerous scale-like hairs.

Inhabits North-west Territory.

Body blackish-brown, with numerous, robust hairs almost resembling scales, which are longer in three yellowish metallic,

thoracic vittæ of which the lateral ones are broader and terminate in a spot on the humerus; the vittæ and spot are pale brownish cinereous; antennæ rufous; elytra with large costal spots, interstitial lines obsoletely alternating with blackish and pale brown-cinereous; suture behind the middle also pale brown-cinereous; thighs beneath near the tip emarginate: anterior tibiæ a little incurved at tip.

Length one-fifth of an inch.

2. *P. COMPTUS*.—Elytra with subquadrate, brown spots.

Inhabits United States.

Body cinereous-olivaceous, covered with small scales; rostrum shorter than the head and thorax, rather narrower at base: antennæ and feet rufous; thorax somewhat rounded, with a much dilated, brown, somewhat metallic vitta: [13] scutel small triangular: elytra with slightly impressed, but punctured striæ, interstitial lines flat, with more or less numerous brown quadrate spots, particularly near the suture, where they are alternate.

Length much over three-twentieths of an inch.

#### PERITELUS Germ.

1. *P. OHRYSORRHÆUS*.—Body covered with dense scales and having sparse, short rigid, inclined hairs; thorax nearly obicular: head, the line of the eyes raised and chestnut color; elytra paler behind, or with a very oblique brown band behind the middle; the striæ simple impressed lines; impunctured.

Length over three-twentieths of an inch.

Inhabits Pennsylvania.



Length nearly three-tenths of an inch.

*Peritelus leucophæus* of Dejean, *Agraphus leuc.* Schön., but I believe it has not been described.

### CYCLOMUS Sch.

Subgenus OPHRYASTES Germ.

Clava five-jointed; eyes narrowed before.

1. *C. VITTATUS* nob. (*Liparus*) Jour. Acad. Nat. Sc. vol. 3, p. 316.

2. *C. SULCIROSTRIS* nob. (*Liparus*) Jour. Acad. Nat. Sc. vol. 3, p. 318.

### LIXUS F. Schönh.

1. *L. MARGINATUS*.—Black, covered with minute cinereous hairs; thorax impressed; elytra, region of the scutel and middle of the base indented.

Inhabits United States.

Body black, covered with short, minute, robust recurved hairs, punctured; antennæ rufous, club dusky; thorax a little convex each side, behind the middle of the side rectilinear, a little contracted before, with an indented line above, more profound near the base; with dilated, confluent, slightly impressed punctures not deeply sinuated at base, with regular series of punctures: elytra region of the scutel indented subacute: abdomen dull fulvous behind.

Length from the origin of the rostrum nearly seven-twentieths of an inch.

The hair detains a ferruginous powder. It is found on the lower Missouri. It also occurs in the Atlantic States. With my first description of this species I gave it the name of *impresus*, but in the Curcul. Dispos. Method. Schönherr quotes the same name for a very different and large species of S. America from Sahlberg. [14]

2. *L. CONCAVUS*.—Base of the thorax and of the elytra with a common dilated indentation.

Inhabits Indiana.

Thorax convex each side, much contracted before, with very small punctures; dorsal indentation obsolete near the anterior margin and in the middle, profound at base: elytra with regular

punctured striæ, not rugose; base with a dilated common deep indentation equalling that of the thorax, and another smaller indentation on the middle of the base: thighs unarmed

Length over half an inch

Common, and is the largest species that I have met with in this country. The hair of the body detains a yell. with ferruginous dust which often gives the whole insect that color. It is smaller than the *conjectus* F., the thorax is much more convex each side, the elytra are less abruptly contracted each side at base, &c

3 *L. LATERALIS*. Thorax laterally cinereous, elytra with a transverse basal groove

Inhabits Arkansas

Body rather slender; head punctured between the eyes *sutrum* but little arched, punctured between the eyes, about thorax with rather large profound distant punctures on each side, cinereous, a dorsal indented line; sides reticulate on the posterior three fourths, and rather suddenly contracted on the anterior fourth. elytra with regular series of punctures, somewhat indented above at the scutell, basal margin with a groove, basal edge much arched

Length seven twentieths of an inch

4 *L. MEXICUS*. Thorax indented before and behind the middle and with rather small punctures

Inhabits Louisiana

found punctures, on the side is slightly and regularly curved, not abruptly contracted before, &c.

This species was sent to me by Mr. J. Barabino of New Orleans.

#### PISSODES Germ.

*P. STROBI* Peck, [*Rhynchænus*] Jour. Mass. Agr. Soc. Jan., 1817.

*P. nemorensis* Germar, Species Novæ, p. 318.

Dr. Harris sent me this insect as the *P. strobi*, or White pine Weevil of Professor Peck, whose name having the priority must be adopted.

#### ERIRHINUS Schönh.

*E. MUCIDUS*.—Body black-brown with short prostrate yellowish hairs; rostrum slender, linear, arquated, punctured, much longer than the head and thorax: antennæ rufous; elytra with rather wide, impressed, densely punctured striæ; hairs arranged in small spots. [15]

Length one-fourth of an inch.

Resembles *E. vorax* Gyl., but the thorax is more rounded and the elytra have a more truncated appearance.

#### ANTHONOMUS Germ.

1. *A. QUADRIGIBBUS*.—Ferruginous; elytra with about four tubercles.

Inhabits United States.

*Curculio quadrigibbus* Melsh. Catalogue.

Body dull ferruginous; rostrum more than half the length of the body; thorax with three obsolete whitish lines: pleura bilineate, of which one is more distinct: elytra with double series of punctures, the interstitial lines alternately elevated, the two inner ones on each with two or three compressed elevations, of which the posterior one on the inner line is more prominent: posterior declivity paler: anterior thighs two-toothed, the posterior tooth prominent.

Length (exclusive of the rostrum) less than three-twentieths of an inch.

I have taken this species on the *Cratægus*.

2. *A. MUSCULUS*.—Dull rufous; scutel and elytral spotted bands whitish.

Inhabits United States.

*Curculio varians* Melsh. Catal.

Body more or less dull rufous, or piceous, punctured: head piceous: rostrum with elevated lines: antennæ rufous: club dusky: thorax piceous, very much crowded with punctures; small recurved distant whitish hairs: scutel oval white: elytra with dilated impressed striæ of large punctures; rufous with the edge piceous; two or three undulated, macular, whitish bands of short hairs: beneath piceous: feet rufous.

Length, including the rostrum, one-tenth of an inch.

Var. a. Obscure piceous, almost black; bands obvious.

This varies considerably in its depth of coloring.

Subgenus ODONTOPUS nob.

Eyes approximate.

3. A. CALCEATUS.—Spine of the anterior thighs robust, denticulated before.

Inhabits Indiana.

Body black: antennæ piceous; clava darker: thorax very densely punctured, rather large, much narrowed before: scutel longitudinal, oblong, sublinear: elytra with profoundly impressed, punctured striæ, interstitial lines flattened, densely punctured; anterior thigh with a very prominent robust tooth; anterior to which are small denticulations; intermediate thighs with a small tooth; posterior pair with the tooth obsolete; tibiæ, anterior pair much arquated.

Length, including the rostrum, one-tenth of an inch.

mucronate at tip; pectus and postpectus with a longitudinal white line.

Length three-twentieths of an inch. [16]

*Curculio myrmex* Herbst. Natursyst.

In appearance it has a slight resemblance to a Formica.

[*Otidoccephalus* Chev. is an older name of this genus.—LEC.]

#### BALANINUS Germ.

1. **B. PROBOSCIDÆUS** Fabr. (*Rynchænus*.) Rostrum as long again as the body. This seems to be *Curculio Daviesii* Swederus in Transactions of the Stockholm Society, 1787, and it is probable that the latter name is prior to that of Fabr.

2. **B. NASICUS**.—Rostrum not so long as the body or hardly longer, not thicker at base, but proceeding abruptly from the head, rectilinear to the middle, piceous.

It is remarkable by having the rostrum at base hardly thicker than in the middle, in consequence of which it appears to proceed abruptly from the head without any gradation.

It is the *Curculio nucum* of Melsh. Catal.

3. **B. RECTUS**.—Rostrum rectilinear or very slightly recurved to near the tip where it curves downward: antennæ very slender. Inhabits Pennsylvania.

This is distinguishable by the rectilinear or slightly recurved rostrum.

4. **B. NASUTUS**.—Body robust: scutel elongated white.

Inhabits Pennsylvania.

This species differs from *proboscideus* F., in being more robust and in having the scutel longer. Schönherr has proposed the name of *rostratus* for this insect, (in litt.)

#### TYLOMUS Schönh.

**T. LINEATICOLLIS** Say. [*Rynchænus*.] Journ. Acad. Nat. Sc. vol. 3, p. 313.

Var. a. much smaller.

Length exclusive of the rostrum less than one-fifth of an inch.

It differs also considerably in the lineations of the thorax, and the alternate elevated, interstitial lines of the clytra are less obvious and not so acutely edged. I have named it provisionally *palmirollis*.

[Belongs to *Rhyssomatus* Sch.—LEC.]

## ORCHESTES Illig.

1. *O. EPHIPPIATUS*.—Blackish piceous; elytra each with two yellowish spots.

Inhabits Indiana.

Body blackish, more or less tinged with piceous, densely punctured: base of the rostrum piceous: elytra striate punctured, a large double yellowish hairy, somewhat common spot before the middle and a transverse abbreviated common band of yellowish hair behind the middle, both on a piceous surface; feet and antennæ rufous.

Length over one-tenth of an inch.

A very distinct species.

2. *O. PALLICORNIS*.—Black, antennæ rufous with a black tip.

Inhabits Indiana.

Body black, densely punctured; rostrum lineated and punctured; antennæ dull rufous, the club darker black: thorax confluent punctured: elytra with punctured striæ, the interstitial lines somewhat rough and flat: thighs with a short acute tooth.

Length one-tenth of an inch.

[17]

Var. a. Tarsi piceous.

This species is very abundant.

## MADARUS Schönh.

*M. UNDULATUS* nob. [*Rynchænus*] Journ. Acad. Sc.

The thorax varies from sanguineous to black.

The covering of white hairs, with the three denuded spots distinguish this species. I have obtained it in Indiana as well as in Pennsylvania.

2. *B. PICUMNUS* Herbst. *Natursyst.*

Vol. 7, p. 30, pl. 99, f. 9. This is a common species. The third joint of the antennæ is hardly longer than the fourth. The covering of hairs is more dense than in the preceding species.

[Belongs to *Centrinus* Sch.—LEC.]

3. *B. PENICELLUS* Herbst. *Natursyst.* vol. 7 ; p. 29, pl. 99, f. 6 F.

Much like the preceding, but larger, and the third joint of the antennæ is as long again as the fourth. I described it under the name of *amictus*, but I have little doubt that it is the species described by Herbst. Genus *Toxerus* Sch.? *holosericeous* Sch. Dej.

[Also a *Centrinus*.—LEC.]

4. *B. UNDULATUS*.—Black ; elytra with two undulations.

Inhabits Mexico.

Body black ; head with small punctures, sparse on the vertex, more dense on the rostrum : rostrum arquated : thorax a little compressed each side on the anterior margin : with rather large confluent lateral punctures and smaller sparse ones on the disk : elytra with capillary impunctured striæ, becoming rather dilated at tip ; interstitial spaces flat, with numerous transverse lines, a dilated indentation or undulation before the middle, and rather behind the middle, a less obvious indentation near the tip.

Length over one-fifth of an inch.

\* Var. a. Body dark brassy polished ; undulations of the elytra obsolete.

Length less than three-twentieths of an inch.

The pectoral groove is very distinct, but the antennæ are too robust, and the club is too obtuse to be placed in the genus *Centrinus*, and the fusiform club of *Madarus* will not permit a reference to that genus.

5. *B. STRIATUS*.—Interstitial lines hardly wider than the striæ, and with a single series of punctures.

Inhabits United States.

Body black, punctured : rostrum a little prominent at the insertion of the antennæ on each side ; more or less transversely in-

dented between the eyes antennæ dark piceous, inserted beyond the middle of the rostrum; second joint rather long; third not longer than the fourth; club obtuse; thorax subconic with approximate orbicular punctures and a glabrous middle line; basal edge deeply sinuous [ 18 ] elytra with deep punctured striæ; interstitial lines hardly broader than the striæ and each with a single series of rounded punctures: anal tip naked, densely punctured: pectus slightly indented: anterior feet not very distant.

Length one-fifth of an inch.

This is the true *striatus* of Melsheimer's Catalogue; the following species which I formerly confounded with it, is different.

6. B. INTERSTITIALIS nob. (*Rynchænus*) Journ. Acad. Nat. Sc. 3, p. 314.

Much like the preceding, but the thorax is more rounded being more abruptly contracted before and the punctures are much smaller. The interstitial lines are broader and their punctures have a transverse rugulous appearance.

7. B. TRANSVERSUS.—Thorax at the scutel obtusely lobed; scutel transverse.

Inhabits Missouri.

Body black, punctured: head transversely indented between the eyes: antennæ obscure piceous, inserted beyond the middle of the rostrum; third joint but little longer than the fourth: club ovate: thorax rather abruptly contracted before; punctures numerous, rather dense; middle lobe of the base very obtusely rounded; elytra with deep punctured striæ; interstitial lines



Body blackish piceous, punctured; eyes small; antennæ piceous; rostrum sulcated; thorax lobed at the eyes; subinequal, somewhat rugose; two whitish longitudinal lines on each side diverging before and behind with numerous minute cinereous hairs, and with two or three oblique uniting lines; elytra triangular much wider at base than the thorax and subacute at tip, each with four elevated acute striæ, the exterior ones united at tip; interstitial grooves dilated, concave, with a double series of transverse punctures, an oblique, fulvous, oval spot at the humeral base, tip brown; epipleura a series of punctures, base hirsute with a double series; feet varied with cinereous hair; thighs with a robust, prominent spine beneath near the middle, and a smaller one nearer the tip.

Length from the front to anus less than one fifth of an inch.

Found many specimens ascending a hickory tree (*Juglans*) in the fruit of which they deposit their eggs, in the latter part of June and beginning of July.

[Belongs to *Conotrachelus* Sch.—LEC.]

2. *C. ELEGANS*.—Piceous brownish; elytra with a paler, more or less dilated space behind.

Inhabits United States.

*Curculio elegans* Melsh. Catal.

Body dull piceous, more or less varied with brown or blackish: rostrum sulcated, carinate, piceous: antennæ rufous: thorax lobed at the eyes; punctured; an obsolete, oblique, cinereous line each side proceeding to the posterior angles: elytra with four somewhat elevated, acute lines, the exterior ones uniting behind; interstitial spaces wide, with double series of punctures, obsolete behind; behind the middle is a more or less dilated common space, narrower at the suture than on the lateral margin; on this spot the inner elevated [19] line is interrupted, and the line is also depressed or interrupted towards the base; thighs two-toothed, somewhat annulated with piceous and blackish.

Length less than one-fifth of an inch.

Var. a. Somewhat cinereous.

Var. b. Paler piceous; larger.

I have obtained this species in June on *Pinus rigida*. The body is more oblong than that of *anaglypticus*; the humerus is less prominent. It occurred in New Jersey, Florida, and the

varieties in Missouri. Can this be *C. aratus* Germar? His description does not altogether agree with my specimens.

[Also a *Conotrachelus*.—LEC.]

3. *C. FOVEOLATUS*.—Black, with large, profound punctures; elytra with yellowish spots.

Inhabits United States.

*Curculio foveolatus* Knoch in Melsh. Catal.

Body black, with dilated punctures; head with dense, small punctures; a frontal indentation, and yellow spot; rostrum robust, moderate, arquated, punctured like the head: antennæ jointed; first joint hardly reaching the eyes; thorax with three small yellowish spots and one before; elytra with regular series of large quadrate punctures; several small yellowish spots and a large, irregular one behind: feet unarmed.

Length less than one-fifth of an inch.

This insect differs so essentially from the characters of this genus as given by Schönherr that it may be separated under the following name and characters:—

Genus *Tyloderma*.—Antennæ rather short and robust, eleven-jointed; rostrum moderate, rather robust, arquated; pectus grooved; postpectus entire; thorax lobed at the eyes; tarsi spongy beneath: elytra covering the tip of the abdomen.

From *Cryptorhynchus* it is distinguished by the number of joints in the antennæ, and in this respect it agrees with *Lyprus*, *Tapinotus* and *Ulosomus* Sch., but the former has the tarsi compressed, and in *Ulosomus* the recipient groove is extended upon

5. *C. POSTICATUS* nob. Journ. Acad. Nat. Sci.

[Is a *Conotrachelus*.—LEC.]

6. *C. PAROCHUS* Herbst. (*Curculio*) Natursyst.

Varies in size. I have a specimen from Missouri, of which the length is nearly one-fourth of an inch.

The recipient groove in this species extends upon the postpectus and terminates between the intermediate feet.

7. *C. ARGULA* Fabr. (*Rhynchænus*) Syst. Eleut.

*Curculio nenuphar* Herbst. Natursyst.

*R. cerasi* Peck, Jour. Mass. Agr. Soc. Jany. 1819.

This also varies much in size, and depredates on the plumb and peach and other stone fruits. My kinsman, the late excellent Wm. Bartram, informed me that it also destroys the European Walnut in this country. [20]

#### Subgenus CAMPTORHINUS Sch.

8. *C. TUBULATUS*.—Thorax tubular before; interstitial lines with a series of dusky punctures.

Inhabits Indiana.

Body black, punctured: rostrum rather slender, arquated; between the eyes indented: thorax densely punctured, anteriorly abruptly contracted so as to be almost tubular; elytra with deeply impressed, punctured striæ; interstitial lines flattened, and with a series of punctures, each furnishing a recurved, whitish hair.

Length under one-fifth of an inch.

I place this small species in the present subgenus, from the character of the eyes, which are very large, remote above and closely approaching beneath.

#### CEUTORHYNCHUS Schupp.

2. *C. ACEPHALUS* nob. (*Falciger*) Journ. Acad. Nat. Sc. 3, p. 309.

The common whitish line at base of the elytra is rather less obvious than that of *C. pericarpus* F.

[Belongs to *Cælixoles* Sch.—LEC.]

2. *C. CRETURA* Herbst. (*Curculio*) Natursyst. 7, p. 70, pl. 100, fig. 5, C.

I mentioned this species under the name of *4-spinosus* in the Journ. Acad. Nat. Sc. 3, p. 310.

[Belongs to *Phytobius*.—LEC.]

3. *C. TRIANGULARIS*.—Thorax with two obtuse tubercles : elytra with a common subtriangular, whitish spot at base.

Inhabits Indiana.

Body robust, short : densely punctured : antennæ bright rufous, club blackish : rostrum with somewhat elevated lines ; thorax with dense, rather large punctures ; a longitudinal indented line in which are white hairs ; an obtuse tubercle each side a little behind the middle : elytra with deeply impressed striæ, and rather large punctures ; interstitial lines transversely rugose ; at base is a common elongated whitish triangular spot ; lateral edge, behind the humerus, white ; beneath with scale-like, white hairs : thighs unarmed.

Length about three-twentieths of an inch.

This is longer than *pericarpus* F. which it much resembles, but the common spot is much more dilated behind and triangular.

4. *C. INÆQUALIS*.—Thorax 4-tuberculate, and bidentate before.

Inhabits Indiana.

Body brown, short and robust : thorax with an indented line, which so indents the anterior edge as to exhibit two denticulations in that part ; each side of the middle is an obtuse rather large tubercle, and still more lateral and a little posterior is a less obtuse tubercle : elytra with the alternate interstitial lines more elevated.

Length over one-tenth of an inch.

I obtained many specimens resting upon a newly constructed fence in the spring.

This is the *Curculio quercus* Melsh. Catal.

Belongs to the subgenus *Copturus* Sch.

2. *Z. OPERCULATUS* nob. (*Cryptorhynchus*) Jour. Acad. Nat. Sci.

3. *Z. OCVLATUS* nob. (*Cryptorhynchus*) Jour. Acad. Nat. Sci.

#### CENTRINUS Schönh.

*C. SCUTELLUM ALBUM*.—Punctured; with scales; scutel white. Inhabits United States.

*Curculio scutellum album* Knoch, in Melsh. Catal.

Body black, densely punctured, and with short pale yellowish or whitish scales; head minutely punctured: rostrum long, punctured, with a short, impressed line at base: antennæ piceous: thorax with dense orbicular punctures covering the whole surface; the tip of the posterior middle white at the scutel: scutel white: elytra with deeply impressed striæ; interstitial lines flat, broad, densely punctured: beneath with whitish metallic scales, much more dense than on the superior surface.

Length over three-twentieths of an inch.

Var. a. Over one-fifth of an inch, the rostrum is more rectilinear towards the tip.

Var. c. Elytra with a slight piceous tinge.

I have taken this insect in Pennsylvania, Indiana and Missouri. The variety is from Arkansas.

#### CIONUS Clairv.

*C. SCROPHULARIÆ* Auct. My specimen is so much like the European individuals that it can hardly be considered to vary from them.

#### RHYNCHOPHORUS Herbst.

1. *R. PRÆPOTENS*.—Thorax with three black vittæ.

Inhabits Arkansas.

Body black, covered with dense, prostrate, cinereous hairs: rostrum shorter than the head and thorax; thorax with three black vittæ, extended behind at the scutel: elytra with double series of punctures; a black vitta on the middle of each, and a narrower subsutural one.

Length more than three-fifths of an inch.

This is a fine insect.

[Schönherr (3, 62) has described a *Lixus præpotens* Say, which is evidently this species, he afterwards mentions Say's description (4, 988) as being of an unknown genus: the insect is unknown to me, unless it should be identical with *Cleonus trivittatus* Say, Curc. 10, (ante 270); the size given is different, but this is hardly sufficient to warrant us in continuing them as distinct.—LEC.]

2. R. INTERSTITIALIS.—Thorax nearly as long as the elytra: interstitial lines with a series of punctures.

Inhabits United States.

Body black brown, with large punctures: rostrum linear, a little curved, punctures large at base, smaller at tip; base grooved above; head punctured, small; antennæ rufous: thorax almost as long as the elytra, with double series of punctures; interstitial lines not rounded, and with a series of small punctures: thighs unarmed; tibiæ with hair inside, and mucronate at tip.

[This and all the following species belong to *Sphenophorus* Sch.—LEC.]

3. R. PERTINAX.—Thorax with three vittæ; elytra regularly striate.

Inhabits Florida.

*Calandra pertinax* Olivier, Ins.; Schönh.

Body black, more or less covered with a dense, dull yellowish crust: rostrum arquated compressed: with an elongated groove at base, above attenuated [22] at the tip; thorax particularly covered with the crust, which is punctured, leaving only three

suboval before the middle, and the lateral ones have an obvious branch extending to the posterior angles; elytra almost truncate behind; striæ numerous; interstitial lines slightly punctured, the alternate ones more obvious; two or three striæ between the interstitial lines.

Length half an inch.

Much like *R. pertinax*, but the broader thoracic vittæ, the more numerous striæ, unequal interstitial lines and almost truncated elytra distinguish it.

5. *R. CICATRICOSUS*.—Thorax with three vittæ; elytra with an elevated line and obsolete dilated indentations.

Inhabits Louisiana.

Body black, partially covered with a cinereous crust or pelticle; rostrum arquated, compressed, with a slight groove at base above; thorax with three elevated, dilated, irregular impunctured vittæ, the lateral ones have an obvious branch extending to the posterior angles: elytra with numerous striæ a more obvious, elevated, subsutural, impunctured, interstitial line; numerous dilated, obsolete dots or slight undulations.

Length nearly nine-twentieths of an inch.

Resembles the preceding as respects the number of striæ of the elytra, but their surface is rendered a little irregular by indented dots or undulations which are obsolete; the thoracic vittæ are a little truncated at tip.

6. *R. VENATUS*.—Thorax trilineate, and with discoidal punctures; elytra with capillary striæ; surface a little inequal.

Inhabits United States.

Body black opaque, more or less, and particularly the thorax, covered with a dull cinereous deposite; rostrum with discoidal punctures at base; compressed, a little arquated; a dilated impressed line at base above; thorax with discoidal, equal punctures; trilineate, the intermediate line slender, the lateral ones undulated, a little broader, punctured: elytra with distinct, acute striæ, punctures large but not profound, obsolete, excepting each side and at base; interstitial lines alternately and very slightly more prominent; surface slightly inequal.

Length over three-tenths of an inch.

Smaller than the preceding species, and the thoracic elevated lines are much more slender.

7. *R. RECTUS*.—Thorax with three abbreviated raised lines, and dense discoidal punctures; elytra with series of punctures.

Inhabits United States.

Body black, opaque, covered with a dull cinereous coating; rostrum compressed, arquated, punctured at base, and with a dilated, impressed line at base above; antennæ piceous: thorax with close set, discoidal punctures; three elevated lines or narrow vittæ, of which the intermediate one is abbreviated into an irregular spot before the middle, or almost obliterated by the punctures behind, the lateral ones are rectilinear, a little oblique and obliterated before by [23] the punctures: scutel polished; elytra with regular series of rather large punctures, the four interstitial lines next the suture, on each, more elevated than those of the middle.

Length about three-tenths of an inch.

In comparison with *R. venatus* the thorax is much more densely punctured, and the lateral vittæ are rectilinear.

8. *R. IMMUNIS*.—Naked; thorax profoundly punctured, excepting on the middle and each side of the middle.

Inhabits Louisiana.

Body black, slightly polished, not covered by any deposit: = :  
 rostrum compressed, arquated, with minute punctures at base, = se.  
 and a profound impressed line at base above: antennæ piceous: = s :  
 thorax with numerous profound punctures; a broad impunctured, = Bed,  
 longitudinal, hardly raised space each side of the middle, extend- - Bsd-  
 ing to the anterior and posterior margins, and a transverse im- - am-  
 punctured space before the middle: scutel polished: elytra with ds th  
 regular, somewhat double series of punctures; interstitial lines = see  
 regular, convex, alternately a little wider, and wider than the = he  
 of the punctures.



Body black, punctured: rostrum arquated, compressed, piceous towards the base; with an impressed, punctured line; antennæ piceous: thorax with dense punctures, destitute of obvious elevations: scutel concave, polished: elytra with series of punctures rather wider or as wide as the interstitial lines, which also have a series of small punctures; tip dull piceous: feet rufous, with black incisures.

Length about three-tenths of an inch.

In general shape it resembles *R. immunis* nob., but the thorax has not very obvious elevations and is more generally punctured; the punctures of the elytral series are larger and the interstitial lines have a series of small punctures; the feet also are rufous.

10. *R. INAEQUALIS*.—Thorax with numerous discoidal punctures; elytra with the punctures in the series remote.

Inhabits United States.

Body black, more or less covered with a dirty brown pigment or crust, punctured: rostrum moderate, compressed, arquated, with an impressed line at base; thorax with discoidal punctures and from one to three slight elevations: elytra with obvious striæ, in which are remote punctures; interstitial lines with oblong, longitudinal punctures; sutural line with a series of small close set punctures.

Length nearly one-fourth of an inch.

The elytral punctures are remote in the striæ, and those of the interstitial lines are much elongated.

11. *R. COMPRESSIROSTRIS* nob. (*Calandra*) Journ. Acad. Nat. Sc. 1823. Amer. Ent vol. 1, pl. 9.

Gemar, Coleopt. Sp. Nov. 1824.

[24]

#### COSSONUS Clairv.

1. *C. CORTICOLA*.—Black; thorax impressed behind; rostrum with an indented line between the eyes, and another on the middle of the rostrum.

Inhabits United States.

*Curculio corticola* Melsh. Catal.

Body deep black, immaculate, punctured; head, punctures minute and remote upon the vertex and becoming larger and more dense towards the tip of the rostrum; a profoundly indented dilated line between the eyes; rostrum dilated towards

the tip, piceous : thorax with a transverse obtusely indented line on the anterior submargin ; punctures large separate profound orbicular, minute upon the anterior margin and confluent upon the posterior and lateral margins : middle of the base widely indented and with a carinate line in the indentation : elytra profoundly striate, striæ with large profound transverse punctures.

Length, base of rostrum to tip of elytra more than three-twentieths of an inch.

A species equally common in Missouri and Pennsylvania. I have observed it to inhabit in considerable numbers under the loose bark of yellow Pine trees in October.

2. *C. PLATALEA*.—Thorax impressed behind ; rostrum punctured ; thorax rather short.

Inhabits United States.

Head punctured, a little indented transversely between the eyes ; rostrum dilated towards the tip, punctured : antennæ piceous ; thorax with the punctures not very profound, distant, irregular ; a basal indentation, with a slight, obtuse carina in the middle of the indentation : rather short, much rounded on the sides ; elytra, striæ with large punctures ; tarsi obscure piceous.

Length nearly one-fourth of an inch.

The thorax is proportionally shorter than that of the *corticola*, the punctures are less deeply impressed, and the rostrum is not obviously indented longitudinally. It varies in having the tibiae obscure piceous.

## SUPPLEMENT.

## ERIRHINUS Sch.

**E. EPHIPLATUS.**—Body yellowish-rufous, with numerous prostrate hairs: thorax with a slightly indented, longitudinal line: elytra with rather wide impressed striæ, containing large punctures; near the base a common transverse black spot, connected along the suture with another transverse, triangular black spot: beneath, excepting the feet, dusky: thighs unarmed.

Inhabits Indiana.

Length one-tenth of an inch.

**2. E. RUFUS.**—Body pale rufous, with numerous, oblong, whitish prostrate scales: rostrum longer than the head and thorax, arquated, linear: elytra with impressed striæ: suture, near the scutel, indented: scutel not very obvious.

Inhabits Missouri.

Length one-tenth of an inch.

## ANTHONOMUS Germ.

**1. A. ERYTHOPTERUS.**—Body black-brown: rostrum very slightly curved, as long as the head and thorax, thickly punctured: antennæ rufous: head not obviously punctured with white, prostrate hair beneath; a puncture rather above the line of the eyes: thorax densely punctured: scutel with prostrate white hair, rounded: elytra beyond the middle and excepting at the suture, dull rufous; with impressed punctured striæ; and with scattered rather short hairs each side: stethidium with prostrate, white hair.

Inhabits Pennsylvania.

Length over one-tenth of an inch.

*Curculio erythropterus* Melsh. Catal.

Mr. Schönherr informs me that Dejean has given to this species the name of *suturalis*.

**2. A. SIGNATUS.**—Body with numerous, prostrate, white hairs: rostrum longer than the head and thorax, slightly arquated, linear, lineated: scutel oval; elytra sanguineous, with punctured, impressed striæ; region of the scutel to the middle of the

suture, and band of three large, unequal spots behind the middle, brown.

Inhabits United States.

Length less than one-tenth of an inch. [ 26 ]

I adopt the name proposed by Schönherr, in preference to that of *sanguinipennis*, under which I described it.

BALANINUS Germ.

B. CONSTRICTUS nob. (*Rhynchænus*) Journ. Acad. Nat. Sc. vol. 3, p. 313.

[Belongs to *Erirhinus*.—LEC.]

TYCHIUS Germ. Sch.

1. T. ARATUS.—Body entirely covered with pale olivaceous, dense, elongated or rounded scales: rostrum as long as the head and linear; scales like robust hairs; transversely indented over the insertion of the antennæ; a longitudinal impressed line; tip naked, rufous: thorax with the hair-like scales converging backwards to the dorsal line: elytra with indented striæ, punctures are not visible; with densely imbricated, rounded scales: middle of the interstitial lines with a series of prostrate scale-like hairs: thighs unarmed, emarginate.

Inhabits Missouri.

Length three-twentieths of an inch.

Can this be *C. penicellus* Herbst?

2. T. AMOENUS.—Body dark brownish, with minute scales; rostrum somewhat arquated, as long as the head and thorax, dull

Inhabits Pennsylvania.

*Curculio nigrinus* Melsh. Catal.

Length one-tenth of an inch.

2. *B. INTERSTITIALIS* nob. (*Rhynchænus*) Jour. Acad. Nat. Sc. vol. 3, p. 314.

3. *B. SCOLOPAX*.—Body dark chestnut: rostrum longer than the head and thorax, slightly curved, linear: thorax conic, with small, numerous punctures: elytra deeply impressed, [27] not obviously punctured, a little shorter than the abdomen.

Inhabits Missouri.

Length over one-tenth of an inch.

4. *B. ACUTIPENNIS*.—Body brassy, highly polished, punctured: rostrum as long as the head and thorax, arquated, linear: thorax, punctures profound but not close set; base undulated; elytra with acute, deeply impressed, impunctured striæ, which, on the posterior declivity are dilated so as to make the interstitial lines acute, and elevated; tip of the elytra on the middle with an elevated, acute tooth.

Inhabits Mexico.

Length one-tenth of an inch.

#### CRYPTORHYNCHUS Illig.

1. *C. RETENTUS*.—Body covered by very short, dense, prostrate hair; rostrum longer than the head and thorax; a little arquated, punctured and on the sides lineated: thorax with two whitish undulated vittæ: scutel orbicular: elytra with four elevated, acute, interrupted lines, between which are double series of impressed punctures: elevated lines obsolete on the depressed tip: thighs emarginate towards the tip and bidentate.

Inhabits Mississippi.

Length less than three-tenths of an inch.

It seems to be related to *C. obtentus* Herbat?

[Belongs to *Conotrachelus* Sch.—LEC.]

2. *C. LINEATICOLLIS* nob. (*Rynchænus*) Journ. Acad. Nat. Sc. vol. 3, p. 313.—As this has evidently the pectoral groove it cannot belong to the genus *Tylomus*, the anterior feet also are distant.

3. *C. PALMACOLLIS*.—Thorax with numerous small grooves.

Inhabits United States.

Rostrum longer than the head and thorax, with elevated lines: antennæ sanguineous: thorax with numerous small grooves converging at the dorsal line: elytra with double series of large punctures, the intervening lines elevated, acute: thighs with an acute tooth.

Inhabits United States.

Length one-fifth of an inch.

Allied to *lineaticollis* N., but the punctures of the elytra [28] are larger; body smaller:

[Vide ante, p. 279.—LEC.]

4. *C. CRIBRICOLLIS*.—Body black; with numerous, very short hairs: rostrum as long as the head and thorax, transversely indented between the eyes: antennæ rufous: thorax much narrower before; the whole surface covered by large concave punctures, without any very flat space between them: elytra much wider than the thorax, with rather wide, impressed striæ, in which are close set punctures.

Inhabits Mississippi.

Length nearly three-twentieths of an inch.

[Is a *Conotrachelus*.—LEC.]

5. *C. OBLIQUUS*.—Body covered with orbicular scales, which are dusky, black and white: thorax with three distinct black dots, placed transversely: scutel small, black: elytra triangular; region of the scutel, extending from the humerus to the suture, dusky, in which are about two black spots: then a very oblique

equal spots; interstitial lines rounded, somewhat unequally elevated.

Inhabits Louisiana.

Length less than three-twentieths of an inch.

#### BAGOUS Germ.

1. *B. MAMILLATUS*.—Cinereous; elytra tuberculate.

Inhabits Missouri.

Body cinereous; elytra, each with two tubercles behind the middle, placed obliquely, a smaller one on the middle and the humerus with a small tubercle: thighs clavate: tibiæ much arquated towards the tip, and at tip acute, with [29] rather long, rigid hair on their inner side.

Length nearly three-twentieths of an inch.

2. *B. SIMPLEX*.—Covered with dusky, somewhat olivaceous, orbicular scales: rostrum shorter than the head and thorax: thorax with a slight appearance of an impressed band on the middle?; elytra with an impressed striæ; punctures not visible; striæ obsolete on the posterior declivity, excepting the two exterior ones; humerus rather prominent: tibiæ, intermediate pair more arquated.

Inhabits United States.

Length over one-tenth of an inch.

Schönherr informs me that Dejean has given the name of *egenus* to this species.

3. *B. ÆREUS*.—Body dull brassy: rostrum short, thick: thorax not obviously punctured above, lateral punctures not deeply impressed: scutel distinct: elytra with striæ of punctures at base, none beyond the middle: feet rufous: thighs slender.

Inhabits United States.

Length one-tenth of an inch.

Schönherr has separated this species under the generic name of *Anakis*. Dejean proposed for it the specific name of *ærcus*, I formerly described it under the name of *semipunctatus*.

#### TYLODES Sch.

##### Subgenus ACALLES Sch.

T. *CLAVATUS*.—Body brown, covered with short, upright, clavate bristles: rostrum moderate, arquated: thorax with the

punctures visible: elytra with striæ of punctures, the clavate bristles on the interstitial lines.

Inhabits Florida.

Length nearly one-tenth of an inch.

#### CEUTORHYNCHUS Schüpp.

C. CURTUS.—Body short, robust, blackish: rostrum as long as the thorax, arquated, cylindrical: thorax narrowed before, with rather large numerous, impressed punctures; a transverse, impressed line on the anterior margin; and a longitudinal, impressed line, more obvious at base; each side rather behind the middle is a smaller, subacute tubercle: [30] elytra, region of the scutel impressed; striæ profound and as wide as the interstitial lines: thighs rather slender, unarmed.

Inhabits United States.

Length less than one-tenth of an inch.

[Is a *Coeliodes*.—LEC.]

#### CLEOGONUS, Sch.

C. SEDENTARIUS.—Body with minute scales, of a blackish or dusky color, but with a few irregular, small, whitish patches, of which the largest is on the posterior declivity of the elytra, extending by two branches to the tip: thorax with rather large punctures: scutel small, rounded, white: elytra, striæ hardly impressed, with very large, not close set, longitudinal punctures: thighs with a white annulus near the tip: tarsi with silvery hairs, sericeous.



## RHYNCHOLUS Creutz. Sch.

*C. LATINASUS*.— Body glabrous, blackish chestnut: rostrum broad, short, a little narrower in the middle, confluent punctured: thorax with numerous, profound and not very dense punctures; somewhat depressed; sides regularly arquated; elytra, striæ about equal to the interstitial lines, impressed; punctures regular, profound, dense: thighs abruptly clavate, unarmed.

Inhabits Florida.

Length one-tenth of an inch.

New species of North American Insects, found by Joseph Barabulo, chiefly in Louisiana.

New Harmony, Indiana, January, 1832.

### COLEOPTERA.

#### BUPRESTIS Linn.

*B. THUREURA*.—Scutel transversely elongated.

Inhabits Louisiana.

Body brassy greenish, with dilated, unequal, impressed punctures: vertex with an acute, longitudinal, impressed line: antennæ green: thorax with the punctures more confluent each side, and a longitudinal, glabrous line: scutel transversely elongated, sub-bilobate: elytra with punctured striæ; interstitial lines irregularly punctured and with unequal and irregular glabrous spaces: edge not obviously serrate; tip with a narrow subemarginate truncation: beneath cupreous, anal segment emarginate.

Length less than four-fifths of an inch.

The breadth of the scutel is considerably more than double its length. It resembles *lurida* F. (which is *corrosa* Dej.) but the extraordinary latitude of the scutel distinguishes it; that species has also bidentate elytra, and a tridentate anal segment.

[Belongs to *Poecilonota*.—LEC.]

#### DERMESTES Fabr.

*D. NUBILUS*.—Thorax with ferruginous hair and black dots;

but the puncture upon the middle of each of the two posterior ventral segments is very obvious, and does not exist in the present insect. I have found it in Florida and Pennsylvania. Dr. Pickering sent me an individual from Salem, Massachusetts. It resembles *marmoratus* nob., which is a much larger insect and has the two ventral punctures like *murinus* but smaller.

[The ventral punctures mentioned are not specific but sexual characters.—LEC.]

#### ATEUCHUS Fabr.

A. HUMECTUS.—Blue-black, glabrous, impunctured; elytra with minute striæ.

Inhabits Mexico.

Body black with a decided tinge of blue or violaceous, impunctured, glabrous, polished: head simple, bidentate at tip: antennæ cinereous-black, dull ferruginous at base: thorax simple, rather convex: elytra somewhat convex, striæ acute but remarkably slender and slightly impressed, not visible to the unassisted eye. [5]

Length nine-twentieths of an inch.

Much smaller than *voleus* Fabr., which it resembles much in the form of the head, but the present species is polished and entirely impunctured.

[Belongs to *Canthon*.—LEC.]

#### TROX Fabr.

T. ÆQUALIS.—Elytra simply striate, the interstitial spaces convex with ferruginous fascioles.

Inhabits United States.

Body brown-black, punctured: palpi and antennæ rufous: thorax not deeply impressed along the middle: elytra regularly and simply striated: interstitial lines equal, a little convex, with oblong fascioles of ferruginous hair; feet black-piceous.

Length one-fourth of an inch.

This species inhabits various parts of the Union, and I received a specimen several years since, from Dr. Melsheimer, under the name I have adopted. It resembles *arenarius* F. of which however the alternate interstitial lines are more elevated.

## LAMIA Fabr.

L. CRYPTA.—Clothed with dark ferruginous, prostrate hair.  
Inhabits Louisiana.

Body densely covered with short, prostrate, dark reddish ferruginous hair, concealing the punctures: antennæ not longer than the body, joints gradually diminishing in [6] length, eleven in number, the terminal ones with a gray basal annulus: thorax with the anterior and posterior diameters equal, with a tubercle, or short, obtuse, spine each side: elytra with the slight punctured series almost concealed by the hair; a sutural striæ obliterated at base, but passing around the tip and uniting with a stria on the exterior margin, which reaches the base; tip rounded.

Length three-fifths of an inch.

I have seen no other specimen than the individual sent me by Mr. Barabino.

[It belongs to the genus *Stenosoma* Muls., and was described by Haldeman as *Ataxia sordida*, Trans. Am. Phil. Soc. 10, 56.—LEC.]

## ALTICA F. [Illiger.]

1. A. EXAPTA.—Dark-green; thorax with a transverse line; feet tinged with piceous.

Inhabits Louisiana.

Body oblong-oval, dark-green, sometimes with a tinge of blue: head not obviously punctured: antennæ tinged with piceous, particularly at base: mouth somewhat piceous: thorax not ob-

rax is narrower in proportion to the width of the elytra, and the impressed line is much less profound.

2. *A. OCREATA*.—Pale honey-yellow; antennæ, tibiæ and tarsi black.

Inhabits Louisiana.

Body pale honey-yellow; antennæ, excepting the first and second joints, black; thorax on the posterior submargin having a transverse groove, which does not reach the lateral margin, but at its extremities it is abruptly reflected to the posterior edge; elytra destitute of striæ; feet with the knees, tibiæ, and tarsi black.

Length three-twentieths of an inch.

Many species have the groove on the posterior submargin of the thorax, such as *ignita* Illig. *helxines* Fabr., &c. but in the present species this groove, at each of its extremities, is abruptly turned backward and terminates at the posterior edge of the thorax.

## HEMIPTERA.

### PENTATOMA Oliv.

1. *P. BIFIDA*.—Metasternum elevated and bifid at the tips.

Inhabits Louisiana.

Body oval, pale ochre-yellow, with the impressed punctures dusky: head very short, wide and obtuse: antennæ, second joint rather larger than the third; last joint rather [8] longer than the penultimate: thorax, posterior angles rounded, not prominent; punctures distinct, very obvious; an impressed submarginal anterior line, curving backward towards the posterior angles, and another near the edge of the anterior emargination: scutel, punctures remote; white at tip; hemelytra, punctures nearer to each other: tergum brownish, margin paler: beneath paler than above; intermediate and posterior pairs of feet widely separated transversely by the metasternum (Kirby) which is more prominent than the coxæ, impunctured, bifarious at each extremity, anteriorly terminating midway between the anterior and intermediate feet and receiving the extremity of the very short promuscis, posteriorly receiving the prominent point of the epigastrium: venter with an obtuse slightly elevated carina.

Length over two-fifths of an inch.

The species in which this character of the elevated metasternum occurs, and in which the tarsi have the usual number of joints, may be distinguished as a subgenus under the name of *Larva*.

[Belongs to *Elleis*, and is probably one of the Mexican species described by the older authors.—HILLEN.]

♂ P. TENEBRIONA.—Blackish; antennae and feet varied with white.

Inhabits Louisiana.

Body densely punctured, blackish: head narrow, long, acute at the tip: eyes prominent: antennae second and third joints equal; all the joints white at their bases excepting the first: scutum yellowish, terminating between the posterior spot: thorax with prominent, acute spines at the posterior angles, inclined a little forwards; elevated behind, anterior angles somewhat truncate, not reaching [9] the eyes, lateral edge simple: areolae with a few, obsolete yellow points, tip yellowish; hemelytra with a few obsolete, yellow points: feet yellowish, tip of the tibiae and points on the tibiae and on the tarsi black.

Length nearly half an inch.

#### PENTATOMA

P. HILARIA.—Green, tips of the three last joints of the antennae blackish or rufous.

Inhabits United States.

Body bright green, punctures very numerous and dense, edges

[*Nezara pennsylvanica* Beauv. (1805) pl. 11, fig. 5: *Rhaphigaster sarpinus* Dallas, Brit. Mus. Cat. Hemipt. (1851) part 1, 276.—UHLER.]

、 RHINUCHUS Kirby.

1. *R. NASULUS*.—Posterior tibiae, in all their length, dilated and compressed.

Inhabits Georgia, Florida and Louisiana.

Body fuscous: head with a projecting spiniform termination: antennae reddish brown; basal joint as long as the second, fuscous; terminal joint longer than the penultimate, yellowish: thorax with small, elevated dots; lateral angles more or less prominent: hemelytra, membranaceous part blackish: tergum on the lateral margin with a short whitish line at the incisures: thighs spinous beneath, posterior pair much thickened: tibiae yellowish; posterior pair fuscous, dilated and compressed in their whole length; inner edge minutely denticulate; exterior edge very obtusely a little undulated: width decreasing to the tip.

Length one inch.

A large species. One of the spines of the posterior thighs is sometimes much more prominent than the others. I received several specimens from Mr. Oemler of Savannah, and I obtained one in Florida besides these sent me by Mr. Barabino from Louisiana.

The posterior tibiae are much more slender at tip than those of *compressipes* F.

2. *R. DECLIVIS*.—Thorax dilated at the posterior angles; beneath whitish sericeous.

Inhabits Georgia and Louisiana.

Body dark brown: head with an acute or spinous tip: antennae dark ferruginous, terminal joint paler: thorax [11] much elevated behind; the anterior declivity being almost vertical and sericeous with very short, whitish hairs; numerous, small, distant tubercles; lateral edge with short, thick spines; posterior angles dilated, subacute at tip: scutellum with a marginal impressed line and dull whitish tip: beneath whitish sericeous: feet black, fuscous; thighs with four or five spines beyond the middle, posterior pair not greatly dilated; posterior tibiae dilated their whole length, more prominent towards the exterior base.

Length one inch and one-fifth.

A large species. The posterior tibiae have considerable resemblance to Drury's figure of those of *compressipes* F., but the posterior angles of the thorax are much more dilated.

#### REDUVIUS Fabr

*R. PECTORALIS* — A complicated spine beneath the eye, and a projecting spine on each side of the pectus before.

Inhabits Indiana, Florida and Louisiana.

Body dark cinereous: head spinose beneath, conchiform behind: antennae, first joint more robust; second joint a little longer; third shortest; fourth nearly as long as the third. Beneath the eye a branched spine, behind which is a smaller one. Base of the head with four tubercles above, and spinose each ant. rostrum, first joint much longest; thorax with impressed line somewhat canalliculate, pectus before with two parallel, prominent, somewhat arched spinose extending on each side of the top of the rostrum; anterior pair of feet a little more robust (12) tibiae absolutely spotted and lacinated: tibiae uncoloured: posterior feet much longest.

Length less than half an inch.

When at rest the first joint of the antennae is protracted, and the remaining joints inflected.

#### ZELUS Fabr

*Z. MEXICUS* — Yellowish, thoracic spot, feet and base and tip of the tibiae black.



## PETALOCHIRUS Beauv.

*P. BIGUTTATUS*.—Hemelytra with a yellow spot beyond the middle and another at base.

Inhabits Louisiana.

Body black : antennæ brown : pronotum and feet dull honey yellow : scutellum at tip extending into an obtuse spine : hemelytra, around the tip of the scutellum a yellow spot, and an orbicular one on each beyond the middle : abdomen yellowish on the margin.

Length seven-tenths of an inch.

A fine insect, readily known by the two yellow spots on the hemelytra. The diastema which occupies the extremity of the anterior tibiae, in this species is not confined to the extremity, but extends up the inner side of the tibiae, nor is its limit so definite as in some other species.

[Belongs to *Pirates*, and is *P. mutillarius* Fabr. Syst. Rhyng. 280 : Herrich Schäffer, 8, pl. 269, fig. 829.—UHLER.]

## TETTIGONIA Latr.

*T. COAGULATA*.—Head and thorax irrorate with dull yellowish ; anterior tibiae subclavate.

Inhabits Louisiana.

Body dusky, brownish : head depressed above, rather longer than the width between the eyes, rounded before and bounded by an obtuse edge ; not gibbous beneath ; obsolete irrorate with dull yellowish : thorax obsolete irrorate with dull yellowish, which on the scutellum is still more obscure : hemelytra subhyaline, immaculate, somewhat tinged with bluish towards the tip : tergum blue-black, with a yellow lateral margin, broader towards the [14] base : pleura dusky, irrorate with dull yellowish : pectus yellowish : feet yellowish, more or less reticulate with blackish on the thighs ; anterior tibiae gradually a little dilated to the tip and with their tarsi dusky ; intermediate tibiae with a black line ; posterior tibiae with the obtuse spines of the exterior side black, giving a regular series of black points : venter yellow, segments black at their bases.

Length under half an inch.

In comparison with *irrorata* F., which it most resembles, the anterior termination of the head is more obtusely rounded transversely, rather longer and much less convex on the inferior than the hemelytra are more hyaline and are not spotted; the color of the abdomen is quite different and the anterior tibiae are sub-clavate.

## HYMENOPTERA.

### SPHEX.

**S. NARENA.**—Black, head and thorax varied with golden.  
Inhabits Louisiana.

Front and nases golden: antennae entirely black: behind the eyes a large golden spot: collar golden: thorax with a golden vitta each side, meeting before the scutal and anteriorly curved downward before the wings and terminating in a double spot on the pleura: metathorax, a transverse line under the scutal disk and line each side extending to the posterior coxae golden: wings tinged with ferruginous at base and dusky towards the tip: third cubital cellule triangular, anteriorly almost acute first recurrent (16) nervure almost continuous with the dividing nervure of the second and third cellule: abdomen entirely black, a little sericeous at base, petiole short, distinct: feet entirely black.

Length over one inch.

Intimately connected with *S. (Chloris) chlorinatus* F. but

## DILOPHUS Meig.

*D. strygius*.—Black, polished; inferior transverse wing nervure distinct.

Inhabits Louisiana.

Body entirely black, immaculate, polished; thorax with the anterior series of spines slightly interrupted: wings dark fuliginous, blackish on the costal margin; transverse [16] nervures distinct; a darker shade on the stigma: anterior tibiae with a series of spines on the middle and another at tip.

Length to the tip of the wings about one-fourth of an inch.

The ultimate cross nervure joins the middle nervure before the bifid portion. The sexes are alike in their markings. This species differs from the *orbatus* Wied., which is destitute of an obvious ultimate cross nervure.

[The name must be changed, as there is another *Dilophus strygius* Say, Journ. Acad. Nat. Sci. Phil. 6, 155. I would take the present to be a synonym of *D. orbatus* Say, if the sexes were not here stated to be alike in their markings.—SACKEN.]

Descriptions of new species of HETEROPTEROUS HEMIPTERA of  
North America.

New Harmony, Indiana, December, 1831.\*

SCUTELLERA Lam.

*S. VIRIDIPUNCTATA*.—Piceous, with green impressed punctures.  
Inhabits Florida.

Body entirely piceous or dark-reddish, with all the punctures,  
above and beneath distinctly bright green; thoracic punctures  
more numerous on the anterior lateral margins: scutal with a  
black spot each side before the middle; feet honey yellow.

Length seven-twentieths of an inch.

I obtained two individuals when in East Florida with Mr.  
Maclure.

[This is *Pachycoris chrysorrhoeus* Fabr. Syst. Rhyng, 188:  
Germar. Zeitsch. 1, 95, and is found in S. Carolina, Florida and  
Mississippi.—UHLER.]

TETYRA Fab. Leach.

1. *T. MARMORATA*.—Variegated; costal margin with transverse  
fuscous lines.

Inhabits New Jersey.

Body variegated with more or less bright yellow and fuscous;

2. *T. FIMBRIATA* nob., Amer. Entom. vol. 3. much resembles *T. diana* F., which, however, is somewhat larger, with fulvous markings and blackish antennæ and feet. The latter is a [756] southern species and I have obtained many specimens from New Orleans, preserved in a solution of muriate of mercury.

THYREOCORIS Schrank.

*T. HISTEROIDES*.—Blackish, antennæ dull honey-yellow.  
Inhabits United States.

Body oval, greenish-black, polished, with rather small, not dense or profound punctures; antennæ dull honey-yellow: feet dark piceous.

Length from over three-twentieths to one-fifth of an inch.

Resembles *T. scarabaeoides* Linn., but is larger, the puncturing is less profound and not so dense. The *lateralis* F. has the margin of the hemelytra white. It is a common insect and varies in magnitude.

Nuttall presented me with a large individual from Arkansas. [This is *Corimelaena nitiduloides* Wolf, Icones Cimicum, 98, tab. 10, fig. 92, which dating in 1802 has priority.—UHLEB.]

2. *T. ALBIPENNIS*.—Fulvous; hemelytra white.  
Inhabits Missouri.

Body pale fulvous, oval; head; thorax blackish before and on each side: lateral margin white: scutel each side at base with a small black spot: hemelytra white with a small rufous spot: beneath piceous: lateral margin of the pectus white.

Length less than one-fifth of an inch.

This insect is mutilated; but it is a very distinct species. I obtained it on the Missouri river, when with Major Long's exploring party.

EDESSA Fab. Lat.

1. *F. CRUCIATA*.—Above with a sanguineous cross.  
Inhabits United States.

Body greenish yellow: antennæ pale rufous: thorax with a sanguineous band on the posterior margin extending upon the lateral obtuse angles; hemelytra, the coriaceous portion, with the inner and posterior margins sanguineous, giving the appear-

ance of a cross on the back : beneath yellowish : venter with abbreviated, lateral, slender, sanguineous lines, tip sanguineous.

Length two-fifths of an inch.

When the hemelytra are at rest their sanguineous margins represent a common cross.

Curtis gives this genus the name of *Acanthosoma*, but the character upon which it is instituted enters into the natural [767] character of *Edessa*, as stated by Fabricius, "Sterno sæpius elevato," notwithstanding which, however, he referred some of the species to another genus, probably without observing their distinguishing trait.

2. *E. LATERALIS*.—Tergum sanguineous, lateral margin yellow with a black spot.

Inhabits North-west Territory and Canada.

Body yellowish-green, with large, sparse, dusky punctures : antennæ a little tinged with rufous ; terminal joint blackish at tip : thorax on the edge immediately behind the posterior lateral angles obtusely deeply emarginate : hemelytra slightly bifasciate with pale fuliginous and a slight spot of the same color on the membranaceous portion : tergum sanguineous : lateral margin yellow, interrupted with quadrate black spots ; venter pale sanguineous, with deeper colored punctures and lateral transverse abbreviated lines.

Length three-tenths of an inch.

A smaller species than the preceding and quite distinct by many characters. I obtained several specimens in Major Long's expedition to the source of St. Peter's river

rufous; lateral margin yellowish-rufous, with blackish incisural margins; rostrum robust.

Length over three-fifths of an inch.

This insect was presented to me by Nuttall. It differs from *punctipes* nob., inasmuch as that common species has the second joint of the antennæ shorter than the third; and ultimate joints are black; the punctures of the body also are [758] black, the feet have black points and the rostrum is slender. The present species is also larger.

2 P. AUGUR.—Thoracic spines pointing forward; beneath with five vittæ.

Inhabits Georgia.

Body rather slender, attenuated from the thoracic spines to the posterior extremity; yellowish-green; head with two vittæ of impressed black punctures; antennæ pale rufous; first joint long oval; third joint longer than the second; thorax, spines acute, pointing forwards; punctures of the disc pale rufous, of the lateral margin blackish; scutel and hemelytra, punctures blackish: beneath with three or five vittæ of black punctures; thighs with black points.

Length two-fifths of an inch.

In most respects this agrees with *typhaeus* F., but it has no sanguineous mark in the middle of the hemelytra. It was sent to me by Mr. Oemler, of Savannah.

3. P. EMARGINATA—Bluish; scutel with three fulvous dots.

Inhabits Georgia.

Body purplish blue; rostrum pale fulvous; thorax at posterior angles, with a cylindrical emarginate spine; scutel having three orbicular fulvous spots: feet at base pale fulvous: beneath, under the rostrum, region of the feet, middle of the ventral base, anus, and triangular lateral spot fulvous.

Length half an inch.

*Female*.—Thorax with the anterior and lateral margins and longitudinal line in the middle dull fulvous; the two basal spots of the scutel sometimes confluent.

Length three-fifths of an inch.

The *floridanus* Linn., is described to be black, otherwise I should suppose this to be related to it; that species is said to be

an inhabitant of South America. I received this species from Mr. Oemler of Savannah, as an inhabitant of Georgia.

The basal joint of the antennæ is oblong-oval and the third joint is rather longer than the second.

4. *P. TRISTIGMA*—Venter with a series of three or four black dots, the posterior one largest.

Inhabits United States.

[759]

Above pale yellowish-olive or whitish-olivaceous, with dense blackish punctures and a few small, irregular, scattered, impunctured spots: posterior portion of the eye beneath whitish: antennæ rufous: fourth and fifth joints brown, excepting the base of the fourth; second joint considerably shorter than the third: a black line from the base of the antennæ to the eye: thorax with the lateral angles rather prominent, angulated but not spiniform; lateral edge whitish and concavely arquated: blue-black, on the lateral margin with a pale dot on the middle of each segment: beneath yellow, with reddish points, with a black spot on the middle of each of the three or four posterior segments, the posterior one largest and oval: feet pale, with black points; a black point at the termination of each incisure.

Length seven-twentieths of an inch.

Female, with a black line on the middle of the one or two posterior segments of the venter.

Length nearly two-fifths of an inch.

This species is not rare. It resembles *P. punctipes* nob., Jour. Acad. Nat. Sci. vol. 4, p. 314, which is so common on thistles, &c. but is smaller and is distinguished by the ventral spots and



I have found specimens in Pennsylvania and Florida. It is larger than *P. punctipes* nob., and the lateral thoracic angles are prominent, but not angulated, as they are in that species. The *punctipes* also is destitute of the black points at the lateral terminations of the ventral incisures. [760]

†† *Thorax unarmed with a spine.*

6. *P. LIGATA*.—Dull olive green, external edge sanguineous. Inhabits Missouri.

Body olive green, rather dull; confluent punctured: antennæ black; second joint rather longer than the third: thorax, lateral margin sanguineous passing to yellowish on its inner side; scutellum at tip bright sanguineous: hemelytra sanguineous on the lateral margin nearly to the middle, abdomen on the lateral margin from the middle to the tip sanguineous: beneath tinged with yellow on the pectus: feet greenish, yellowish at base.

Length eleven-twentieths of an inch.

Presented to me by Nuttall as a native of Missouri. The edge of the head is not reddish.

[Is *P. rufocinctum* H. Schf., Wanz. Ins. 4, pl. 139, fig. 436. Found in Missouri and Texas; Dr. Fitch says, what I very much doubt, that it occurs in New York.—UHLER.]

7. *P. LATICOORNIS*.—Second joint of the antennæ elongated, compressed; lateral margins of the thorax red.

Inhabits United States.

Body somewhat depressed; marbled with fuscous and brownish-cinereous; antennæ second joint compressed and grooved, as long as the anterior tibi; remaining joints; ; thorax on the lateral edge denticulate; lateral margin rufous: posterior angles a little prominent, rounded: hemelytra on the lateral basal margin rufous: tergum, margin alternating with rufous and black: beneath dusky, pale about the insertion of the feet; rostrum extending beyond the insertion of the posterior feet.

Length seven-twentieths of an inch.

Aspect of *P. annulata* F., but widely distinct. It perhaps ought to be in the previous division of the genus inasmuch as the lateral thoracic angles are a little prominent; but they are obtusely rounded. Belongs to the genus *Halys* Fabr.

8. *P. SENILIS*.—Long oval; tergum blackish, with two paler spots at tip.

Inhabits United States.

Body greenish-olivaceous, rather dull; rather oblong or long subovate; with rather close-set punctures, somewhat confluent on the scutel and thorax, more distinct on the hemelytra, and smaller and more dense on the head: head emarginate at tip; tubercle which supports the antennæ extended into an obvious acute spine: antennæ dull rufous, a little hairy; second joint [761] slightly longer than the third: thorax a little paler on the lateral margin; lateral edge rather concave than rectilinear: hemelytra rather paler on the exterior margin; membranaceous tip almost of the same color: tergum black, with a dull yellowish margin; penultimate segment with two large obscure yellowish, quadrate spots.

Length over three-fifths of an inch.

This species is rather more slender than usual, and the tubercle which supports the antennæ is a little produced into an acute spine.

9. *P. HILARIS*.—Oblong-oval; green; tips of the three last joints of the antennæ blackish or rufous, the two last whitish at base.

Inhabits United States.

*P. hilaris* nob., New Sp. N. Am. Ins. found by J. Barabino, 1882, p. 9. [Ante, p. 804.]

Body bright green; punctures very numerous and dense;

*pensylvanicus* Beauv. pl. 2, but not the same." I have not at present access to Beauvois' work. Sexes alike.

10. *P. ABRUPTA*.—Green; short oval; edges of the head, thorax and abdomen whitish.

Inhabits Georgia.

Body rounded-oval; immaculate, densely punctured; edges of the head, thorax and of the base of the hemelytra obsoletely whitish: antennæ, second and third joints nearly equal; third and fourth, black at tip; fifth

: thorax with the anterior angles obtusely rounded, a small tubercle at the tip of the eye; lateral [763] edge convexly arquated; posterior angles obtusely rounded; beneath green; region of the base of the feet a little tinged with brownish; abdomen on the lateral edge whitish with a black point at each incisure; spiracles white with a blackish point.

Length nine-twentieths of an inch.

Much like the preceding, but it is shorter and more rounded, and the lateral edges of the thorax are decidedly arquated. The specimen is deficient in the terminal joint of the antennæ. It was presented to me by Mr. Oemler. I formerly supposed it a variety of *hilaris*.

11. *P. INSERTA*.—Thorax deeply emarginate before, rounded each side; venter with with a series of black dots.

Inhabits Missouri and Arkansas.

Body oval, pale yellowish, with numerous black punctures on every part, excepting the membranaceous portion of the hemelytra: head unarmed, seated very deeply in the thorax: thorax profoundly emarginate before for the reception of the head; lateral edge arquated, so as to include the posterior angles in the curve; line on the middle and posterior narrow margin impunctured: scutel with a longitudinal impunctured line extending to the middle: hemelytra nervures impunctured: tergum black, densely punctured margin of the general color: beneath with two black spots behind the anterior feet; venter with a series of black dots; lateral margin darker or blackish at the incisures; feet with black points.

Length half an inch.

The specimen from the Arkansaw was given me by Nuttall. The lateral line of the thorax is less oblique than that of the preceding species, and the thorax is somewhat more depressed.

(Male) destitute of the ventral spot?

12. *P. SAUCIA*.—Scutel with a yellowish line; hemelytra with a fuscous line.

Inhabits United States.

Body greenish-yellow; punctures not dense, but rather more so on the head and scutel: antennæ rufous, paler at base; basal joint greenish: supporting tubercle with a short acute conic spine: thorax, lateral edge rectilinear to the posterior rounded angle; [763] scutel with a distinct yellowish vitta: hemelytra with a fuscous vitta, not reaching the base or tip; superior margin yellowish; tergum black, minutely rugose, but not punctured; margin yellowish.

Length about two-fifths of an inch.

The dark brown vitta on the hemelytra is a distinguishing mark.

I took an individual on the eastern shore of Virginia, another in Florida, and a third either in Pennsylvania or Indiana.

13. *P. CALVA*.—Reddish-brown; head and anterior half of the thorax yellowish.

Inhabits Virginia.

Body reddish-brown, punctured: head yellowish; edge darker: antennæ rufous; first and second joints green; third joint a little longer than the second: thorax on the anterior half yellowish;

second joint not longer than the first, and not more than half as long as the third : thorax, rather more than the anterior half yellowish ; lateral edge rectilinear : tergum purple-black, somewhat polished, rufous at tip ; sometimes entirely rufous, excepting the margin, which is yellowish.

Length about seven-twentieths of an inch.

The brevity of the second joint of the antennæ, will readily distinguish this species from the preceding. I obtained specimens in Florida, and an individual was sent me from Georgia by Mr. Oemler. [764]

15. *P. AQUALIS*.—Cinereous, with black punctures ; tergum black with large punctures towards the tip.

Inhabits Indiana.

Body dull cinereous, with numerous rather large, black punctures, head rather long, rounded at the tip : antennæ with close set black points ; second and third joints equal : thorax, lateral edge nearly rectilinear, slightly concave ; scutel scarcely contracted before the tip, which is rounded ; tergum black, the punctures small and sparse at base, and becoming large and numerous towards the tip ; lateral margin with cinereous spots : beneath with black punctures, sometimes assembled in groups ; feet with black points.

Length three-tenths of an inch.

Smaller than either of the preceding, and the second and third joints of the antennæ are equal.

16. *P. RUGULOSA*.—Green, with minute, transverse rugæ ; tergum black at base ; antennæ third joint short.

Inhabits North-west Territory.

Body pale greenish, with minute rugæ, particularly on the thorax ; antennæ third joint hardly more than half the length of the second : thorax much contracted before ; lateral edge rather concave than rectilinear : tergum black at base, the three ultimate segments and the margin green : hemelytra punctured : beneath and feet with small green punctures.

Length over one-fifth of an inch.

The third joint of the antennæ is very short and small, and the small rugæ of the thorax distinguish this species.

17. *P. UNDATA*.—Scutel but little narrowed at tip ; lateral edge of the head undulated.

Inhabits North-west Territory.

Body dull yellowish, with numerous black, deep punctures; head with the lateral edge undulated, the tip abruptly narrowed, with a narrow, deep fissure: antennæ blackish rufous, second joint longer than the third: thorax with the lateral narrow margin and longitudinal line impunctured; lateral edge rectilinear: scutel rather large, not being much narrowed at tip; tergum black, punctured, with a yellowish margin: beneath [765] punctures more dense: venter black, punctured; with the margin yellow: feet with black points.

Length about one-fifth of an inch.

The scutel in its form resembles that of the preceding species, but the brevity of the third joint of the antennæ and the undulated edge of the head distinguish it. I obtained this species when with Major Long's party in the North.

18. *P. DELIA*.—Rather widest behind the middle; scutel but little narrowed at tip.

Inhabits Missouri and Massachusetts.

Body dull-yellowish green; ovate, being slightly widest behind the middle; with rather large, profound, black punctures not closely set: head somewhat long; the obtuse carina impunctured: antennæ rufous, darker at tip; second joint much shorter than the third: thorax, lateral edge rectilinear; lateral margin without black punctures; anterior angles transversely truncate to receive the eyes, and without any tubercle; posterior angles not wider than the hemelytra: scutel not much narrowed at tip;

tween the lateral angles; on the anterior submargin are two transverse, yellow spots, each enclosing a green dot; lateral edge granulated and nearly rectilinear, black or dark rufous; lateral angles but little prominent, rounded: scutel and hemelytra immaculate, membrane whitish or little tinged with rufous: beneath yellow, tinged with green; venter with a lateral submarginal series of points and another series of black points on the lateral edge; tarsi rufous. [766]

Length over two-fifths of an inch.

Var. a. Thoracic band obsolete.

Male much smaller; the anterior portion of the thorax yellowish, obliterating the two spots; feet not obviously rufous.

Length three-tenths of an inch.

The variety of this species was taken by my brother in New Jersey.

One of my male specimens has one of the antennæ not more than half the length of the other, in consequence of the unnatural brevity of the second, third and fourth joints, which are hardly longer than broad; the fifth joint is much compressed but not dilated.

20. *P. NERVOSA*.—Rufous, with black punctures; antennæ second joint half as long as the third.

Inhabits Indiana.

Above rufous or deep testaceous, with numerous separate black punctures: head with confluent punctures, excepting on the carina: antennæ dusky at tip; second joint hardly over half the length of the third; eyes on the posterior part whitish: thorax, lateral edge impunctured, and on its anterior part almost rectilinear, curving towards the lateral angles which are hardly prominent beyond the humerus, and very obtusely rounded: scutel, lateral edge at base arquated so as to leave an obvious interval between its basal angles and the thorax: hemelytra, membrane with its nervures blackish: tergum blue-black; margin yellowish with black spots: beneath pale rufous with black punctures, which become rufous on the abdomen; a blackish, interrupted, lateral vitta from the eyes becomes obsolete on the venter: venter with double black marginal spots; feet with black points.

Length nearly two-fifths of an inch.

The specimen is a female.

21. *P. SEMIVITTATA*.—Pale, with confluent black punctures so arranged as to leave three vittæ on the head and about five on the scutel.

Inhabits Indiana.

Above yellowish-white, with confluent black punctures, and numerous short hairs: antennæ dusky at tip; second joint [767] rather longer than the third: head with three dull yellowish vittæ: thorax with three vittæ, becoming obsolete behind; lateral margin a little depressed, impunctured; lateral edge very slightly arquated; lateral angles rounded, not prominent; scutel with five vittæ confluent behind: tergum blue-black; margin with yellowish, large, quadrate spots: beneath yellowish; two black lines before the eyes: an interrupted lateral vitta of black punctures from the eyes nearly to the posterior extremity: feet immaculate, tarsi dusky.

Length three-tenths of an inch.

The specimen is a female. It is more than usually hairy. It has some resemblance to Stoll, fig. 102, but is shorter.

22. *P. GAMMA*.—Fabr. (*Cimex*) Syst. Rhyng., p. 177, *C. albipes*, E. Ent. Syst. suppl. p. 4 P.; *punctipes* nob., Jour. Acad. Nat. Sci. v. 1, p. 313? A common species.

[Say makes an error in quoting Fabricius for *P. gamma*. There is no such species either in *Systema Rhyngotorum* or in Ent. Syst. or its supplement. The correct name is *P. lugens* Fabr. Ent. Syst. (1794) 4, 125: *C. albipes* Fabr. Ent. Syst. Suppl. 535: *C. punctipes* Beauv. Ins. pl. 8, fig. 6; Say, Journ. Nat. Sci. 4, 312. *Ugulus* 7



Inhabits United States.

Body piceous-black: head emarginate: antennae, second joint dull rufous; ultimate two joints rather long: thorax with numerous punctures, before the middle impunctured; lateral edge white: hemelytra on the lateral edge white: abdomen excepting at base, with a white edge: tibiae white on the exterior edge.

Length about one-fifth of an inch.

It is smaller than *bilineatus* nob., and larger than *spinifrons* nob., and very different from either by many characters. A very common species. It much resembles the *bisotatus*, but is destitute of the white spots of the hemelytra. [768]

[Described also as *Sehirus albonotatus* Dallas, Brit. Mus. Cat. Hemipt. part 1, 127.—UHLER.]

2. *C. BILINEATUS* nob.

Var. *a. picea*. Entirely light piceous.

Inhabits Indiana.

[Belongs to *Aethus* Dallas.]

#### GONOCERUS Lat.

*G. ANTENNATOR* Fabr. The author describes this species to have the second joint of the antennae scabrous and the "ultimo claviformi." Now if these characters are correct, a species in my collection, and which is not rare, is altogether new; but this I consider doubtful. I will however state the differential characters, viz:

*G. DUBIUS*.—Antennae, first joint scabrous or with short spines; ultimate joint oblong oval.

Length nearly half an inch.

Inhabits Pennsylvania and Indiana.

It is probably the insect that naturalists refer to *antennator* F.

[Appears to be *Coreus antennator* Fabr. Syst. Rhynch. 198: it belongs to *Chariesterus*, and is *C. moestus* H. Schf. 7, pl. 217, fig. 681.—UHLER.]

#### SYROMA[S]TES Lat.

1. *S. REFLEXULUS*.—Reddish-brown; head carinate before.

Inhabits Pennsylvania.

Body reddish-brown, with rather large, confluent punctures:

head not extending more than half the length of the basal joint of the antennæ, obviously carinate between the antennæ, tubercles each side of the antennæ; acute: antennæ, first joint robust, rough, much narrowed; second joint shorter than the third; terminal joint half as long as the third: thorax, lateral margin a little reflected, the edge concavely arquated; posterior angles rounded; anterior angles prominent, acute: scutel narrowed before the tip: hemelytra, corium yellowish, rufous near the scutel; nervures very distinct; lateral edge a little reflected; membrane hyaline: beneath greenish-yellow; feet pale rufous; posterior thighs dilated, spinous beneath.

Length one-fourth of an inch.

The rostrum hardly reaches the posterior coxæ. The last joint of the antennæ is elongate-oval and much shorter than the preceding joint, as defined by Latreille in this genus.

2. *S. FRATERCULUS*.—Anterior point of the head extending nearly to the tip of the first joint of the antennæ.

Inhabits Georgia and Indiana.

[769]

Closely resembles the preceding species, but is smaller; the anterior tip of the head extends nearly or quite to the tip of the first joint of the antennæ; the lateral margin of the corium is very distinctly punctured with black; the membrane is marked with a longitudinal obsolete brown line and small points; the general color is darker; the tergum is sanguineous, black at base.

Length less than one-fourth of an inch.

A small specimen was sent to me by Mr. Oemler, from the vicinity of Savannah, and I have obtained the two species.

obviously tinged with rufous; feet paler; rostrum hardly reaching the intermediate coxæ.

Length less than three-twentieths of an inch.

It may be distinguished by the remarkable obliquity of the terminal line of the cotium.

#### COREUS F. Latr.

1. *C. CONFLUENTUS* [CONFLUENS].—Pale brownish; thorax bilineate; abdomen with a spotted margin.

Inhabits Mexico.

Body depressed with numerous minute hairs, pale yellow-brown: thorax with a transverse, slightly elevated line on the posterior submargin; two broad black vittæ, confluent before, and suddenly narrowed on the posterior margin; a black lateral marginal vitta before; posterior angles obtusely rounded: scutellum at base and an abbreviated line black: hemelytra immaculate; corium finely reticulate: abdomen dilated; tergum on [770] the margin alternating with blackish and yellowish: beneath blackish varied with yellowish; feet blackish; knees and coxæ fulvous.

Length three-fourths of an inch.

This is a dilated and somewhat depressed species.

2. *C. DIFFUSUS*.—Brownish; abdomen dilated; antennæ and feet blackish.

Inhabits Georgia.

Body depressed pale yellowish-brown; with short hairs; dilated: head unarmed, the middle of the tip not reaching the base of the first joint of the antennæ: antennæ blackish, hairs very obvious; basal joint a little excurved; second joint a little longer than the third: thorax somewhat transversely punctured; lateral edge irregularly denticulated, particularly anteriorly; posterior angles very obtusely rounded: scutellum black in the middle: hemelytra immaculate; corium finely reticulate; the disks of the basal cellules blackish: abdomen dilated; margin elevated and with a series of black points on the edge; feet blackish piceous.

Length seven-tenths of an inch.

Resembles the *confluenta* nob., but is somewhat more dilated

and the anterior lateral edge of the thorax is rectilinear; whereas in that species it is arquated.

This insect was sent me by Mr. Oemler of Savannah, who took it in the neighborhood of that city.

ANISOSCELIS Latr.

1. A. CORCULUS.—Fuscous; antennæ rufous; posterior tibiæ dilated, not sinuous.

Inhabits Florida.

Body reddish-brown, rather dark, minutely and densely punctured: head simple, with three rufous lines: antennæ rufous; basal joint much shorter than the second, blackish above, second joint longest; ultimate joint rather shorter than the preceding one, fuscous: thorax with the angles not prominent, rounded: scutel undulated on the disc: tergum on the lateral margin with yellowish lines at the incisures: beneath dull rufous with numerous black points; rostrum extending to the middle of the venter: thighs blackish above towards the tip, spinous beneath, [771] posterior pair a little thickened; tibiæ dull yellowish; posterior pair dilated, not undulated on the edge, fuscous with small yellowish spots; the dilatation not continued to the tip; inner edge with a few short spines.

Length four-fifths of an inch.

I obtained two individuals on St. John's river. In one of the two specimens the nervures on the middle of the hemelytra are of a paler color, as if, in some individuals, a pale band might exist in that part.

2. A. ALBICINCTUS.—Ferruginous; hemelytra with a white band; posterior tibiæ dilated, sinuated.

Inhabits Florida.

Body reddish-brown or ferruginous; antennæ, with three yellowish lines;

Length three-fifths of an inch.

Resembles *balteatus* Linn. But according to Drury's figure, that species has simple posterior tibiae. It is still more like *L. phyllopus* Linn., which, however, has the white line undulated and oblique, as figured by Stoll, the posterior thighs more elongated and the posterior tibiae still more dilated, particularly on the inner side, than this species.

It is common in Florida. The male has but two denticulations on the dilated edge of the posterior tibiae, whilst the female has three; the sinuations of the edge correspond with the number of teeth.

3. *A. OPPOSITUS*.—Reddish-brown; hemelytra with a white point in the middle of the corium; antennae rufous; head trilineated; posterior tibiae dilated and sinuated.

Inhabits Indiana.

[772]

This is very closely allied to *albicinctus* nob., but is uniform in its differential characters. It may be known by the small white point of the hemelytra.

4. *A. DECLIVIS* nob. (*Rhinuchus* Kirby) New Sp. N. Am. Ins. found by Jos. Barabino, p. 10. [Ante, p. 305.] Thorax dilated at the posterior angles; beneath whitish sericeous; posterior tibiae dilated and compressed their whole length, more prominent towards the exterior base.

Inhabits Georgia and Louisiana.

Length one inch and one-fifth.

5. *A. NASULUS* nob. (—"—") *ibid.* p. 10. [Ante, p. 305.] Thorax, lateral angles more or less prominent; posterior tibiae dilated and compressed all their length; inner edge minutely denticulate; exterior edge a little undulated; width decreasing to the tip.

Inhabits Georgia, Florida, Louisiana.

Length one inch.

This genus seems to include *Petalopus* and *Rhinuchus* Kirby, of which, however, I have not seen the characters stated, which alone can establish a generic name.

## BERYTUS Fabr.

**B. MUTICUS.**—Unarmed: a short groove between the antennæ.

Inhabits North-west Territory.

Body punctured; pale yellowish brown, unarmed: head not much narrowed before, the tip rounded downwards and compressed; and with a profound short groove above: thorax with a glabrous line: scutel carinate, acute at tip, but not produced into a spine: hemelytra, corium with the punctures dilated: beneath blackish along the middle to the middle of the venter.

Length nearly seven-twentieths of an inch.

Quite distinct from the *tipularis* F., of which the head is elongated before and hemelytra are spotted; and from the *spinosus* nob., by being destitute of spines before the posterior coxæ and on the scutel.

## LYGAEUS F. Latr.

**1. L. SANDARACHATUS.**—Hemelytra yellowish, with a black band and tip; venter sanguineous with a lateral black vitta.

Inhabits Mexico.

[773]

Head sanguineous, with an abbreviated line above the rostrum, and more or less dilated orbits and vertex, black: antennæ and rostrum black: thorax black, anterior margin white; lateral margin yellowish, tinged with sanguineous before; a dorsal slender yellowish line slightly elevated before: scutel black, yellow at

of the basal joint of the antennæ: antennæ second joint longest, ultimate joints rather longer than the third: thorax with two transverse punctured indentations on the anterior margin and middle; margin pale rufous, interrupted near the anterior angles: a longitudinal rufous line not reaching the anterior margin: scutel, disk elevated in the form of a T, which is pale rufous at tip: hemelytra on the lateral and terminal margins pale rufous: abdomen pale rufous on the margin: pectus, anterior and lateral margins pale rufous.

Length over three-tenths of an inch.

I took several specimens in Florida.

3. *L. BISTRANGULARIS*.—Black, base of the hemelytra and venter sanguineous.

Inhabits Mexico.

Head black: thorax black: lateral margin behind the middle and posterior edge sanguineous; scutel black: hemelytra sanguineous, membranous portion black with a slight edging of whitish: pectus and postpectus fuscous; feet black; venter sanguineous with a black tip. [774]

Length over one-fifth of an inch.

Allied to *biviridis* nob., but is not half so large, and the coloring of the thorax is quite different.

4. *L. RECLIVATUS* nob. Var. a. *enotus*. Destitute of the white spot of the membranaceous portion of the hemelytra.

Inhabits Mexico.

5. *L. LEUCOPTERUS* [Chinch bug.] Blackish, hemelytra white with a black spot.

Inhabits Virginia.

Body long, blackish, with numerous hairs: antennæ, rather short hairs: second joint yellowish, longer than the third; ultimate joint rather longer than the second, thickest: thorax tinged with cinereous before, with the basal edge piceous: hemelytra white, with a blackish oval spot on the lateral middle; rostrum and feet honey-yellow: thighs a little dilated.

Length less than three-twentieths of an inch.

I took a single specimen on the Eastern Shore of Virginia.

The whiteness of the hemelytra in which is a blackish spot strongly contrasted, distinguishes this species readily.

6. *L. DISCONOTUS*.—Blackish : third joint of the antennæ much shorter than the fourth : hemelytra dull whitish.

Inhabits Missouri.

Body blackish, punctured, rather wider behind : head a little convex : antennæ first and second joints yellowish : third equal to the first ; fourth joint almost double the length of the third, and as long or rather longer than the second ; thorax very slightly contracted each side of the middle : basal half and anterior edge piceous ; hemelytra dull yellowish-white, punctured ; membrane on the disc brown ; tip wide and obtusely rounded : feet whitish ; thighs honey-yellow, anterior pair a little more dilated ; postpectus with a pure white posterior margin.

Length to tip of hemelytra less than three-twentieths of an inch.

7. *L. GEMINATUS*.—Hemelytra with two small central spots, and four on the posterior edge of the membrane.

Inhabits Indiana and Missouri.

Body dull greenish-yellow ; head dull fulvous, blackish each side behind : antennæ obscure rufous ; first joint, incisures and [776] terminal joint black : rostrum extending a little beyond the origin of the posterior feet : thorax with the transverse impression rather deep and blackish : scutellum dull fulvous, blackish on the basal margin : hemelytra on the corium tinged with yellowish, almost hyaline, and having on the middle two approximate, abbreviated fuscous lines and on the posterior edge four or three fuscous, small dots ; membrane pellucid : beneath black-piceous ; a white



joint equal to or slightly longer than the third: thorax with the anterior margin and transverse impressed line black: scutel blackish each side of the middle; the middle line impunctured: hemelytra, corium yellowish, a dull rufous spot at its tip: membrane milky white with pale brownish spots; tergum fulvous spotted with black as well on the disc as on the margin: beneath more or less spotted with blackish; blackish along the middle; around the origin of the feet yellow; feet obscurely annulated; rostrum extending to the middle of the venter.

Length less than one-fourth of an inch.

I obtained a specimen at Council Bluff and one in Indiana.

9. *L. NUMENIUS*.—Hemelytra with a pale rufous tip of the corium; rostrum as long as the body.

Inhabits United States.

Body greenish-yellow: head long, the tip extending beyond the first joint of the antennæ: antennæ pale yellowish; first joint rather short; second joint a little longer than the third: fourth joint tinged with honey-yellow: thorax with separate punctures, anterior edge and dorsal line impunctured; transverse [776] indentation interrupted by the dorsal lines: scutel pale rufous each side: hemelytra with a pale rufous spot at tip of the corium; membrane with an obsolete fuliginous line in the middle: tergum on the lateral margin with pale rufous spots: beneath tinged with rufous; feet pale: rostrum extending to the tip of the abdomen.

Length less than one-fifth of an inch.

Resembles *scolopax* nob., but the second joint is obviously longer than the third, and the rostrum is more elongated. I do not recollect in what part of the Union I took this species.

10. *L. FALICUS*.—Elongated; hemelytra yellowish with brown nervures.

Inhabits Missouri.

Body blackish, elongated somewhat depressed; antennæ short, robust, hairy; second joint longest: thorax of the basal margin picceous; transversely a little depressed in the middle and with a longitudinal indentation before the middle: scutel with a carinate line: hemelytra shorter than the abdomen, dull yellowish, with brown nervures; corium short and very oblique at tip; membrane

long but little different in appearance from the corium : abdomen, margined with rufous ; feet rufous ; thighs a little thickened.

Length over three-twentieths of an inch.

PAMERA\*, Lepel. and Serv., nob.

1. *P. CONSTRICTA*.—Black ; thorax constricted near the middle ; hemelytra with hyaline lines ; anterior thighs dilated.

Inhabits United States.

Body black, punctured : antennæ, second and third joints dull honey yellow ; terminal joint slightly thicker than the third : thorax convex, constricted a little behind the middle ; anterior to the stricture impunctured ; posterior angles with an oblong tubercle above : posterior margin somewhat piceous : hemelytra fuscous, with whitish lines and spots, those of the membrane arquated : feet greenish-yellow ; thighs annulated with black at tip ; anterior pair dilated, spinous beneath, black, yellowish at tip and base : tibiæ, anterior pair slightly thickened at tip.

Length three-tenths of an inch.

[777]

*Male*.—Hemelytra pale with fuscous points and lines.

Length about one-fifth of an inch.

2. *P. CONTRACTA*.—Blackish ; thorax constricted near the base ; hemelytra at base and two spots hyaline ; anterior thighs dilated.

Inhabits North-west Territory.

Body piceous-black : head with a few hairs : antennæ pale yellowish, terminal joints fuscous ; thorax subcylindric, with

margin, and the arrangement of colors on the hemelytra is different.

3. *P. VINCTA*.—Thorax constricted near the base, and with a transverse line before; hemelytra whitish with a fuscous spot.

Inhabits Florida.

Body blackish, punctured; antennæ, basal joint yellowish, tipped with black; remaining joints —; thorax much constricted behind the middle, subcylindric, anterior margin with a transverse impressed line, anterior to which the margin is piceous; posterior margin of the stricture with a cinereous reflection; basal edge piceous; scutel with a carinate line; hemelytra yellowish-white and punctured on the corium, the posterior margin of which is fuscous; membrane milk-white: abdomen on the margin dull rufous; feet whitish; anterior thighs honey-yellow, dilated.

Length one-tenth of an inch.

Differs from *contracta* nob., in size, arrangement of colors, and by the very distinct, impressed line before. [778]

4. *P. FERA*.—Blackish; thorax transversely indented behind the middle; feet piceous; anterior thighs dilated.

Inhabits United States.

Body blackish; antennæ piceous terminal joint darker: thorax a little transversely indented behind the middle, but not affecting the lateral edge; lateral narrow margin depressed, yellowish and almost translucent behind the middle: hemelytra piceous: membrane with a pale, translucent spot at tip of the corium: beneath black; rostrum and feet piceous; anterior thighs much dilated and spinous beneath; anterior tibiæ arquated, dilated at tip on the inner side.

Length under three-tenths of an inch.

*Male*.—Hyaline spot of the membrane very obvious. Length nearly one-fifth of an inch.

*Var. a.* Thorax behind the stricture piceous; feet entirely honey-yellow.

5. *P. UNA*.—Punctured; antennæ hairy; anterior thighs dilated; thorax a little indented transversely behind the middle; lateral edge arquated.

Inhabits Indiana.

Body piceous-black ; punctures numerous, distinct profound : antennæ distinctly hairy, dull honey-yellow : thorax transversely a little indented behind the middle, and posterior to which the punctures are large and more distant ; lateral very narrow margin depressed and somewhat translucent ; lateral edge a little arquated at the middle ; hemelytra piceous ; punctures distinct, distant on the corium ; membrane dusky with two or three hyaline arquations and obsolete at tip of the corium : feet piceous ; anterior thighs dilated, with about one small spine beneath ; anterior tibiæ a little dilated.

Length one-fifth of an inch.

Resembles *fera* nob., but the lateral thoracic edge of that species is rectilinear.

5. *P. FALLAX*.—Anterior thighs dilated ; thorax with the lateral margin dull whitish with brown spots.

Inhabits North-west Territory.

Body blackish, punctured : thorax on the posterior portion pale, but so densely covered with blackish punctures as to appear [779] blackish ; lateral margin depressed, narrow, dull whitish or yellowish, with a series of brown punctures furnishing hairs ; scutel with two yellowish lines behind, confluent at tip : hemelytra dull yellowish with blackish punctures ; membrane a little clouded with dusky ; rostrum piceous ; a yellowish spot and line over the incisure of each foot ; coxæ and trochanters pale yellowish ; thighs somewhat robust, anterior pair thickest and with a small spine beneath ; tibiæ dull yellowish.

anterior body by a profound contraction, and a little wider: hemelytra whitish; corium with a fuscous band on the middle and spot at tip: thighs pale honey-yellow, fuscous towards their tips; anterior pair dilated, spinous, beneath blackish; pectus and postpectus black on the middle: venter black, margin piceous.

Length one-fifth of an inch.

This varies considerably in the coloring of the head and thorax, which are sometimes even obscure cinereous, with obsolete blackish lines, and on the posterior part of the thorax of many specimens are three distinct black lines. It resembles *vicata* nob., which, however, is not banded in the middle of the corium.

8. *P. DORSALIS*.—Thorax with a whitish line; three last joints of the antennæ subequal.

Inhabits Indiana.

Body dull honey-yellow, punctured: head with an obsolete whitish line: antennæ rather robust, dull rufous; joints a little [780] thicker to the tip; first joint longest; remaining joints subequal; ultimate joint of the usual form but hardly longer than the preceding one: thorax, transverse line not impressed: longitudinal whitish line not reaching the head or scutel: corium with a blackish edge on the inner side at tip; membrane with a double interrupted dusky line; abdomen dark livid, with a yellowish margin; pectus gray, darker in the middle: feet yellowish; thighs with dusky punctures; anterior pair blackish beneath, and armed with many spines.

Length over one-fifth of an inch.

Corresponds with the Fabrician description of *Lygæus crassimanus*, excepting that the anterior thighs are armed.

The following species has the third and fourth joints of the antennæ dilated, subovate.

#### Subgenus PROCHIOMERA [PLOCHIOMERA.]

9. *P. NODOSUS*.—Two ultimate joints of the antennæ thick; thorax constricted behind the middle.

Inhabits United States.

Body piceous-black: antennæ yellowish, two ultimate joints equal, dilated, blackish; second joint not longer than the third: thorax behind the middle constricted, particularly to the lateral

edge; behind the stricture dull yellowish, punctured: scutel with a yellow carina; hemelytra shorter than the abdomen, pale yellowish, punctured; membrane obsolete; wings imperfect: rostrum and feet honey-yellow, anterior thigh a little thicker than the others, with a few small spines beneath; anterior tibiæ a little ciliated at tip; a small spine on the anterior coxæ.

Length about one-tenth of an inch.

Var. a. All beneath honey-yellow.

This is a very common species in various parts of the Union, and the two dilated joints of the antennæ distinguishes it readily.

#### SALDA F. Latr.

1. *S. PICEA*.—Piceous-black; hemelytra entirely coriaceous.

Inhabits Massachusetts.

Body robust, oval, piceous-black; obviously punctured, somewhat polished: head impunctured, honey-yellow before; wider than the greatest width of the thorax: antennæ black-piceous: thorax but little wider behind than before: hemelytra with the [781] corium extending nearly to the tip, the membranes being very short, not more than a mere margin; feet honey-yellow.

Length under three twentieths of an inch.

For this insect I am indebted to Dr. Harris, of Milton.

1. [2] *S. BULLATA*.—Cinereous, beneath black; feet yellowish.

Inhabits United States.

Body robust, oval, whitish-cinereous, with numerous, obvious, dark, profound, impressed punctures: head rather wider than

3. *S. ULIGINOSA*.—Blackish, corium brown, margin whitish; feet yellowish.

Inhabits United States.

Body blackish, punctured: head with an oblique impressed line before the middle, and a yellow exterior edge: hemelytra whitish; inner portion of the corium fuliginous; sexual carina or ovipositor yellowish: rostrum and feet yellowish; posterior thighs dusky at tip.

Length to tip of hemelytra over one-tenth of an inch.

Resembles the preceding, but may be distinguished by its darker color. It is less common.

#### MYODOCHA Latr.

*M. OPETILATA*.—Blackish; feet white at base.

Inhabits United States.

Body piceous-black, deeply punctured: head black, impunctured, polished; neck elongated; antennæ yellowish; first joint black, at tip yellowish; ultimate joint and apex of the preceding [782] one fuscous; thorax constricted in the middle; anterior portion impunctured: hemelytra piceous; lateral narrow margin yellowish, expanding behind into a small dot; membrane fuliginous with the nervures whitish; rostrum yellowish, first joint piceous: feet yellowish; anterior thighs dilated, with a few spines beneath beyond the middle, and with a piceous annulus near the tip.

Length over seven-twentieths of an inch.

This insect is not [un]common in many parts of the Union.

#### ASTEMMA Latr.

*A. MAVORTIA*.—Thorax cylindrical constricted before the basal margin.

Inhabits United States.

Body black: antennæ honey-yellow: thorax, cylindrical, narrowed before to the width of the head, constricted on the basal submargin; base hardly wider than the middle: hemelytra punctured, piceous, a little shorter than the abdomen: wings imperfect: tergum rufous; margin and tip black: feet honey-yellow: anterior thighs dilated, with six or seven equal, equidistant spines: anterior coxæ with a short spine.

Length over seven-twentieths of an inch.

*Male*.—Anterior tibiæ arquated towards the base and with a spine near the middle.

I have taken this species in Pennsylvania, Florida, Indiana and Missouri. I have placed it in the present genus on account of its cylindrical thorax ; but it ought perhaps to form a distinct subgenus.

#### CAPSUS F.

1. *C. OCREATUS*.—Sanguineous: band on the hemelytra and their membrane black.

Inhabits Georgia.

Body light sanguineous: thorax with two transverse impressed lines before the middle; lateral edge black; hemelytra with a narrow, black band; the lateral edge a little reflected; membranous part purple black, with a white terminal margin: beneath immaculate: thighs simple, anterior pair about four-spined beneath at tip; tibiæ blackish-piceous.

Length less than two-fifths of an inch.

[ 783 ]

A very pretty species. It was presented to me by Mr. Oemler. I have not seen the characters of Fallen's genera *Corius* and *Phytocoris*, and it is probable that I have included in this genus, species of both, for the antennæ of a few of these are filiform.

2. *C. SUCCINCTUS* F. Var. a. Surface paler, with numerous black punctures, giving a dusky appearance; origin of the antennæ, and a line on each side of the origin of the rostrum sanguineous.



membranous tip, black, the latter edged with piceous: beneath white, incisures sanguineous: feet piceous black: thighs sanguineous, anterior pair two spined near the tip.

Length over two-fifths of an inch.

Var. a. Hemelytra black, with a pale yellowish lateral margin.

Var. b. Hemelytra black, exterior and terminal margins of the corium pale yellowish.

The rostrum extends beyond the base of the posterior feet.

4. *C. RAPIDUS*.—Reddish brown; hemelytra with a yellowish margin.

Inhabits Indiana.

Body dull reddish brown: head rufous: antennæ black; first joint nearly half as long as the third, [second joint: Harris MS.] white on the basal half, hardly perceptibly larger at tip than at base: third joint not much shorter than the second, and with the last white at base: thorax pale yellow; anterior margin [784] rufous; a black abbreviated band behind the middle: hemelytra, corium at tip with a bright red almost sanguineous triangular spot: beneath rufous: venter dusky on the disk; tibiæ pale yellowish.

Length to tip of the hemelytra three-tenths of an inch.

5. *C. 4-VITTATUS*.—Yellow with four black vittæ.

Inhabits United States.

Body bright yellow: head tinged with fulvous: antennæ black: thorax tinged with fulvous before: four black vittæ not reaching the anterior margin, the lateral ones marginal and more slender: scutel with a black spot each side at base: hemelytra with two blackish vittæ on each, the exterior one having a black annulated dot at tip: membrane blackish, with a dull yellowish arc.

Length to tip of hemelytra three-tenths of an inch.

Inhabits a considerable part of the Union. I have taken it in the North-west Territory, Pennsylvania, Indiana and Missouri, and Mr. Oemler sent me a specimen from Georgia. It is common. Can it be the *Lygus lineatus* F. Syst. Rhyng. p. 234?

6. *C. DISLOCATUS*.—Pale rufous, with two black vittæ dislocated on the hemelytra.

Inhabits Pennsylvania.

Body pale rufous or somewhat fulvous: head with a black

mouth and band on the vertex; antennæ black; basal joint at least half as long as the second; second joint distinctly larger towards the tip, base white for a short space: thorax with two black dilated lines from the middle to the base: scutel black with a yellow vitta: hemelytra with a black vittæ, widely dislocated in the middle; beneath piceous with a yellow line each side: feet honey-yellow.

Length to tip of hemelytra one-fourth of an inch.

Occurred on the *Verbascum thapsus* L.

7. *C. OBLINEATUS*.—Thorax green with black lines; scutel with a yellow V.

Inhabits United States.

Body greenish, sometimes tinged with brown or clouded with obscure rufous, punctures distinct: head yellowish lineated with reddish-brown: antennæ first joint not half as long as the [785] second; thorax greenish, more or less lineated with blackish: scutel blackish, with a lateral edge, and a line in form of a V, yellow: hemelytra with a pale spot at tip of the corium, at the apex of which is a black point: membrane a little dusky, with one or two whitish dots and arc: beneath dusky: venter with a yellowish lateral vitta, or green with a black lateral vitta: feet yellowish with two rufous annulations near the tip of the thighs.

Length to tip of hemelytra over one-fifth of an inch.

This is a very common species and subject to vary considerably. I have taken it in Pennsylvania, Indiana, North-west Territory,

Var. b. Thorax with a longitudinal black vitta.

Var. c. Beneath reddish fulvous, with black feet.

9. *C. GONIPHORUS*.—Black, broadly margined with sanguineous. Inhabits United States.

Body black: head more or less sanguineous, generally blackish at base and tip: antennæ black, second joint generally a little thicker towards the tip; orbits above sometimes a little tinged with yellow; thorax very widely margined each side with sanguineous, leaving a large triangular black spot, of which the base corresponds with the base of the thorax and the tip with the tip; hemelytra, corium with a broad sanguineous lateral margin.

Var. a. Black thoracic triangle deeply emarginate before.

Var. b. Beneath sanguineous on each side. [786]

Var. c. Thighs rufous; tibiæ and tarsi pale yellowish.

Var. d. Thorax sanguineous, with scarcely any appearance of black.

Length from one-fifth to one-fourth of an inch in the tip of the hemelytra.

Not uncommon in various parts of the Union. Nuttall obtained a specimen in Arkansas.

10. *C. NUBILUS*.—Varied with blackish and grayish; antennæ, basal joint hairy, robust.

Inhabits Indiana.

Body above varied with black and grayish green; with numerous short hairs: head and thorax chiefly green; antennæ, joints black at tip; basal joint at least half the length of the second, robust, hairy; second joint perceptibly a little thicker at tip: hemelytra with a grayish spot at tip of the corium, and on the membrane a whitish marginal spot, and a yellowish angulated line: beneath grayish green, a little dusky each side: feet greenish: rostrum extending between the posterior feet.

Length to tip of hemelytra one-fourth of an inch.

Var. a. Tip of the corium with an obscure rufous spot; beneath dusky irrorate with pale, greenish along the middle.

11. *C. MEDIUS*.—Sanguineous, antennæ, scutel and inner portion of the hemelytra black.

Inhabits Indiana.

Body sanguineous, more or less tinged with fulvous, not distinctly punctured: head with two black vittæ between the eyes and one at base of the rostrum, a transverse black line on the neck: antennæ black: thorax sometimes a little dusky behind; scutellum black: hemelytra black; exterior margin of the corium sanguineous: pectus a little dusky in the middle: abdomen black at tip: feet black, whitish at base: rostrum black.

Length to tip of hemelytra one-fourth of an inch.

Var. a. General color ochreous.

Resembles *goniphorus* nob., but is a smaller and more slender insect, aside from other differences, such as the antennæ being entirely black, the second joint not larger at tip than at base, &c. It is more closely allied to *confluentus* nob., which, however, has the inner margin only of the corium dusky and the feet whitish at base. [787]

12. *C. INSIGNIS*.—Black; head, thorax and scutellum more or less sanguineous.

Inhabits United States.

Body black; sanguineous, with a black mark at the base of the rostrum, sometimes extending into a triangle of which the apex is at the base of the head; antennæ black: first joint not half as long as the second; second joint not remarkably larger at tip; remaining joints not abruptly smaller: thorax sanguineous, sometimes with two blackish spots at base, which in some specimens are so dilated as to occupy nearly all the surface excepting the anterior margin and a re-entering angle; scutellum sanguineous, with sometimes a blackish, more or less dilated spot

more than half the length of the second, and rather robust, hairy; second joint a little thicker at tip: thorax yellowish, anterior margin, two dots, and a slight dot near the posterior angles black; scutel yellowish, dusky on the middle of the base and on the basal angles: hemelytra immaculate: feet with minute pale points.

Length to tip of hemelytra nearly one-fourth of an inch.

Resembles *insignis* nob., but the second joint of the antennæ of that species is not obviously thicker at tip; the first joint is naked, and much shorter than that of the present species, &c.

14. *C. CIRCUMCINCTUS*.—Above black; with a sanguineous margin, thoracic line and scutel.

Inhabits Indiana.

Body black: head beneath excepting the trophi, sanguineous: [788] thorax with the anterior and lateral narrow margins and dorsal line acute before and gradually dilating behind, sanguineous: scutel with a much dilated sanguineous line, broadest before and gradually narrowing behind, occupying the greater portion of the surface: hemelytra black with a sanguineous lateral margin, extending as far as the membranous portion: pleura and pectus sanguineous, with two black lines connecting the coxæ: feet black; venter sanguineous, a black line each side connected with a large longitudinal spot behind the middle, extending to the tip of the venter.

Length one-fourth of an inch.

Resembles *C. medius* nob., but may be distinguished by the black thoracic vittæ.

15. *C. CONFLUENTUS* [CONFLUENS].—Above sanguineous; inner margin of the corium dusky; membrane black.

Inhabits Missouri.

Body sanguineous: head blackish on the disk, or with two black lines confluent behind and before: thorax with a dusky transverse line before the middle! corium a little dusky on the inner margin; membrane black: scutel dark rufous or blackish: pectus and postpectus varied with blackish: feet black: venter black at tip.

Length about one-fourth of an inch.

Several specimens were obtained by Nuttall in Missouri. Resembles *goniphorus*, but differs in many respects.

16. *C. SUBMARGINATUS*.—Black; disc fulvous, hemelytra with whitish vittæ.

Inhabits United States.

Body oblong, blackish; not distinctly punctured; head dull fulvous, disc black: antennæ black; first joint hardly one-third the length of the second; second joint cylindric: thorax black; disk dull fulvous: hemelytra with a broad submarginal whitish vitta, originating at the humerus and curving outwards at tip: beneath dull fulvous: feet dull fulvous.

Length one-fifth of an inch.

I obtained one specimen in Missouri and another in Indiana.

17. *C. GEMINUS*.—Black; a yellowish spot at tip of the corium.

Inhabits Indiana.

[ 789 ]

Body black; punctures distinct: antennæ, basal joint white; remaining joints ———: hemelytra at tip of the corium with a large whitish yellow spot; rostrum white: feet entirely greenish-white.

Length nearly one-fourth of an inch.

The contrast between the hemelytral spot and the general color, gives it a little the appearance of *C. gothicus* F., but it cannot be confounded with that insect.

18. *C. STYGICUS*.—Black; tibiæ and tarsi whitish.

Inhabits Indiana.

Body deep black, polished; minutely punctured or somewhat rugulose: antennæ, first joint less than half the length of the

tel with a dilated white line: hemelytra, on the lateral and inner margins of the corium whitish: abdomen at base and feet rufous

Length less than one-fourth of an inch.

The lateral margin of the corium is sometimes yellowish-brown. The base of the abdomen in the recent specimen is often sanguineous.

20. *C. VITRIPENNIS*.—Yellowish; hemelytra hyaline; subfasciate.

Inhabits United States.

Body oblong, pale greenish-yellow: head impunctured, neck blackish: antennæ, first joint three-fourths as long as the second, pale rufous; second joint not obviously larger at tip; third joint very short, whitish: thorax with large punctures; scutel yellow, black at base: hemelytra hyaline, the corium being as transparent as the membrane, with a common dusky vitta, curved outward [790] behind the middle so as to form a band; beyond is another oblique arquated band originating at the middle of the preceding one: beneath greenish.

Length nearly one-fifth of an inch.

A male in my collection has a large blackish spot on the base of the thorax. I have taken it on the oak, in August, in Pennsylvania. I have also found an individual in Indiana.

21. *C. INVITUS*.—Dark livid or blackish; beneath green with a blackish lateral vitta.

Inhabits Indiana.

Body dark brownish livid or blackish, with numerous short prostrate yellow hairs: head dull yellowish, with an impressed longitudinal line: antennæ, first joint less than half the length of the second, which is hardly perceptibly larger at tip; third joint more than half the length of the second, and as long again as the fourth: thorax with small transversely confluent, superficial punctures: scutel with a pale obsolete vitta, beyond the middle: hemelytra with a whitish spot at tip of the corium and a greenish lateral edge: beneath green, with a broad lateral black vitta: feet green: posterior thighs black towards the tip.

Length nearly one-fourth of an inch.

22. *C. IMBECILIS*.—Blackish; antennæ second joint white at tip; hemelytra, with a white band before the middle and spot at the coriaceous tip.

Inhabits Indiana.

Body blackish-piceous; clypeus at tip and rostellum piceous: antennæ, first joint dull rufous, terminal third of the second joint white: thorax, anterior segment with an impressed longitudinal line: hemelytra, with a white band before the middle, and a rufous spot near the tip of the coriaceous portion; tergum pale; feet pale rufous: coxæ, intermediate and posterior pairs white.

Length under one-fifth of an inch.

23. *C. IRRORATUS*.—White; hemelytra and posterior thighs with green points.

Inhabits Indiana.

Body white, tinged with green: antennæ, first joint with green each side; remaining joints very pale brownish, the second black at the basal incisure: thorax with a transverse indented line [791] on the anterior submargin, connected with the anterior edge by an indented line from its middle: hemelytra, except on the membranous portion, irrorate with green points: posterior thighs on the superior edge, with five or six green points.

Length less than one-fifth of an inch.

24. *C. CHLORIONIS*.—Green; first and last joints of the antennæ short, equal.

Inhabits Indiana.

Body green, immaculate, with numerous short hairs, impunctured: antennæ pale; first joint hardly one-fourth the length of the second; second joint cylindric; third joint two-thirds the



corium, and two or three on the membrane: beneath dusky, varied with yellowish lineations on each side of the venter: feet yellowish thighs dusky at tip; tibia with about two dusky annulations.

Length over one-fourth of an inch.

This species, like many others, is subject to vary. It is sometimes yellowish, variegated with brownish, but the thoracic orbicular spots and the annulations of the second joint of the antennæ distinguish it.

The following species having large and very prominent eyes; antennæ, excepting the first joint, remarkably slender and filiform, situated on the front above an imaginary line drawn between the anterior angles of the eyes, and with elongated feet, may be separated under the subgeneric name *Cylapus*. [792]

26. *C. TENUICORNIS*.—Blackish: hemelytra one or two spotted with whitish; antennæ, second joint white at tip; thighs annulated.

Inhabits Indiana.

Head somewhat variegated with yellowish; almost vertical, deeply impressed between the eyes, and with an impressed line: eyes very prominent: antennæ elongated, first joint robust, black; remaining joints slightly thickened at tip and terminating in a white spot: thorax punctured, anterior margin somewhat elevated, with an impressed line; an obsolete slender pale line proceeds thence to the base: scutel punctured, with a hardly elevated, carinated line, tip obsoletely whitish: hemelytra punctured; an obsolete interrupted and abbreviated band near the middle and a rather more distinct band near the tip of the coriaceous portions, whitish; beneath piceous; a triangular spot over the interval between the intermediate and posterior feet, pale green: feet long, pale reddish-brown; thighs biannulate with whitish beyond the middle: tibiæ with an obsolete annulus a little beyond the middle.

Length one-fifth of an inch.

Readily distinguishable by the tenity [tenuity] of the antennæ and the very prominent eyes; the head also is almost vertical and the feet are long. In the magnitude and prominence of the eyes it resembles *Salda* and *Acanthia*.

27. *C. BRACIATUS*.—Black; hemelytra with numerous golden points.

Inhabits Indiana.

Body black: antennæ first joint nearly one-fourth the length of the second; dull honey-yellow at base; second joint rather long, very slightly larger towards the tip, dull honey-yellow in the middle: hemelytra with numerous small spots consisting each of a few golden hairs; membrane fuliginous: knees tibiæ and tarsi yellowish.

Length less than one-tenth of an inch.

It is a very small species often in company with the preceding.

#### MIRIS F.

1. *M. VAGANS* F.—I have compared our specimens with those of Europe and do not observe a specific difference. It is common. [793]

2. *M. DORSALIS*.—Pale yellowish-rufous, immaculate; head with an abbreviated indented line; antennæ rather robust, tapering, rufous; first joint rather thick, as long as the third; second joint about three times as long as the third, cylindric; tergum pale sanguineous excepting the margin; sexual carina elevated, single.

Length less than three-tenths of an inch.

Inhabits United States.

The small hairs of the antennæ are not equal to the diameter of their respective joints.

MIRIS F.

third and tip, which are unarmed rectilinear; beneath piceous-black: feet pale yellowish.

Length to the tip of hemelytra three-twentieths of an inch.

The larva is spinous, fuscous, with a large yellowish spot each side of the middle, and before the middle a broad yellowish vitta. The species is very common.

2. *T. CINEREA*.—Not dilated, hemelytra with six or seven marginal spots.

Inhabits United States.

Body gray; not dilated on the margin; with much dilated punctures; head deeply bifid at tip and with a short robust spine between the eye and antennæ; antennæ, basal joint spherical, abruptly smaller at base; second joint not longer than the first, and less dilated; thorax with four elevated lines, obsolete behind; anterior lateral margin a little dilated: hemelytra covered, like the thorax, with dilated, approximate punctures, [794] and having on the lateral margin a series of six or seven black spots; beneath grayish, more or less varied with brown: venter brownish, with spots or lines of grayish.

Length to tip of hemelytra more than one-tenth of an inch.

In form much resembling *T. cardui* F. It is not uncommon.

3. *T. MUTICA*.—Thorax and scutel with a single line; hemelytra with a brown spot.

Inhabits Indiana.

Body grayish-brown, unarmed, not dilated on the margin; with much dilated punctures: antennæ, second joint rather thicker than the first: thorax, with a paler, slender, glabrous line, and paler line each side: scutel with a paler line on the middle, and a short one each side, not elevated; hemelytra like the thorax with dilated approximate punctures; on the middle an obvious darker, irregular spot or band; membrane reticulate with brown; beneath dusky: tibiæ paler.

Length to tip of hemelytra over one-tenth of an inch.

4. *T. PLEXUS*.—Thorax and scutel trilineate; hemelytra obscurely and minutely reticulate.

Inhabits United States.

Body brownish, more or less tinged with yellow, with dilated

approximate punctures; head with three elevated lines: thorax not dilated on the sides; with three elevated lines: scutel also with three elevated lines: hemelytra with small, symmetrical, orbicular reticulations of nervures; two series of which on the lateral margin are a little larger; those near the inner margin of the membrane also a little larger.

Length to tip of hemelytra nearly three-twentieths of an inch.

5. *T. AROUATA*.—Dilated; nervures and edge ciliate with short spines; lateral edge of the hemelytra arquated.

Inhabits United States.

Whitish with brown spots; dilated; edge, excepting behind, and many of the nervures, ciliated with short spines; nervures pale brownish: thorax with an inflated carina, extending over the head, with one or two large brown spots; sides dilated, bullate, with a brown spot: scutel with an acute, highly elevated carina on the middle, on which is a brown transverse line: hemelytra with an inflated carina before the middle of each, [795] on which is a brown spot; and a brown band before the carina, and another on the terminal margin: lateral edge concavely arquated, without spines on its posterior third and tip: tergum and beneath black; feet yellowish. ♀, ♂.

Length to tip of hemelytra nearly three-tenths of an inch.

Resembles *ciliata* N., but may be distinguished by the brown bands and the arquated exterior edge of the hemelytra.

#### ARADUS Fabr.

neath dull rufous in the middle: feet yellowish, annulate with brownish.

Length nearly nine-twentieths of an inch.

Much larger than *quadrilineatus* nob., which has short and robust antennæ, the second joint smaller at base, &c. Mr. Nuttall presented me with an individual taken in Missouri, and I possess other specimens obtained in this State.

2. *A. ACUTUS*.—Third and fourth joints of the antennæ together, two-thirds the length of the second.

Inhabits Florida and Indiana.

Body fuscous: head inequal, with two longitudinal, indented lines; an acute, projecting point before each eye: tip prominent, obtuse: antennæ black; second joint elongated, narrower at base: third and fourth joints equal; taken together not more than two-thirds the length of the second: thorax quadrilineate, three or four very obvious denticulations on the anterior part [796] of the lateral edge; scutel on the edge a little elevated; hemelytra on the humerus dull yellowish with a denticulated edge; tergum with quadrate cinereous spots in a series within the margin; margin with obsolete pale spots and incisures: tibiæ paler than the thighs: venter tinged with rufous.

Length over seven-twentieths of an inch.

Like *planus* Fabr.; but the second joint of the antennæ of that insect is shorter, cylindric, and the third and fourth joints altogether are nearly equal in length to the third.

It is abundant in Indiana as well as in Florida and varies in having the nervures of the hemelytral membrane margined with whitish.

3. *A. SIMILIS*.—Third and fourth joints of the antennæ together as long as the second.

Inhabits United States.

Body brown: head inequal, with two longitudinal, indented lines: an acute, projecting point before each eye; tip prominent obtuse: antennæ, second joint cylindrical, very slightly thicker towards the tip; third joint whitish, cylindric half as long as the second; fourth joint fuscous, a little shorter than the third and narrowed a little toward the base: thorax quadrilineate, lateral edge dentate: tergum slightly serrate on the lateral edge: beneath fuscous on the disk: feet brownish.

Length over one-fourth of an inch.

Resembles the *acutus* nob., which however has the second joint of the antennæ longer and the ultimate joints equal. It still more resembles *planus* F., but the antennæ of that species are obviously more robust. The penultimate joint of the antennæ is sometimes very dull and almost obsoletely whitish.

2. A. RECTUS—Hemelytra not dilated at the humerus.

Inhabits Missouri and Florida.

Body fuscous, rather slender: head with an indented line each side; an acute, projecting point before each eye; tip prominent, obtuse; antennæ, joints very slightly smaller towards the base; second joint nearly as long as the third and fourth together; the latter a little shorter than the third: thorax quadrilineate and having the thicker abbreviated line near the exterior angle very distinct; scutel with the edge considerably elevated: [797] hemelytra, corium rather long, the humerus not dilated, but rectilinear with the remaining part of the edge; grayish with fuscous nervures.

Length over three-twentieths of an inch.

A small species; sufficiently distinct from the preceding by the rectilinear edge of the hemelytra.

5. A. ORNATUS.—Hemelytra, abdomen and feet pale; antennæ robust.

Inhabits Indiana.

Body blackish-fuscous: head with the process before the eyes, prominent, acute; antennæ robust: thorax rather short; sides

Inhabits Indiana.

Body fuscous: head with the process before the eyes acute and rather prominent; nasus somewhat robust: antennæ reddish-brown, second and third joints equal; fourth joint two-thirds the length of the third: thorax with two approximate elevated lines and a less obvious lateral line which is obsolete before; lateral margin rather widely reflected, yellowish: hemelytra varied a little with dull yellowish: humerus yellowish, dilated; tergum with rather broad transverse rufous lines on the margin; rostrum longer than the head: venter, on the margin like the margin of the tergum.

Length seven-twentieths of an inch.

The equality in length of the second and third joints of the antennæ, distinguishes this species. [798]

7. *A. GRANULATUS*.—Second joint of the antennæ shorter than the third; corium but little longer than the scutel, edge of the thorax obtusely emarginate.

Inhabits Florida and Indiana.

Body fuscous, densely granulated: head with an impressed line each side near the eyes and two near the middle, an acute point before the eyes and an obtuse tip: antennæ rather short, second and fourth joints equal; third joint longest: thorax slightly lineated before, but without any appearance of an elevated line behind: lateral edge obtusely emarginate before the middle: scutel broad, obtuse at tip: hemelytra narrower than the abdomen; humerus not dilated; nervures distinct; corium but little longer than the scutel, with rather prominent nervures; membrane dull whitish: wings as long as the hemelytra: tergum, beneath the wings, rufous: rostrum not longer than the head.

Length one-fifth of an inch.

I found it common in Florida.

With the two following species, it possesses many characters in common with *Aeneurus*, and may be considered as the connecting link with that genus. It has the short, dilated rostrum; the second joint of the antennæ shorter than the third; the wide, obtuse scutel; the short feet, and the anterior feet set wide apart as in that genus, but the appearance of the head and the structure of the hemelytra correspond with *Aradus*, excepting the brevity of the corium.

8. A. *EMARGINATUS*.—Thorax obtusely emarginate before the middle, edge without elevated lines behind.

Inhabits Mexico.

Body black: head with an acute tubercle at base of the antennæ, and another behind the eye: antennæ, first joint more robust than the others, rather suddenly attenuated at base, somewhat larger than the apical prominence of the head; second joint shorter than the first, and not longer than the last; third joint longest; terminal joint attenuated at base, pale at tip: thorax transversely impressed in the middle, the impression terminating each side in an obtuse emargination, edge very minutely crenate; anterior margin slightly quadrilobate; hemelytra [799] at the termination obliquely rectilinear; corium but little longer than the scutel.

Length nearly three-tenths of an inch.

The thorax has no appearance of elevated lines, but these are substituted by four slightly elevated obtuse bullæ on the anterior margin. This species is closely allied to *granulatus* nob., but is a much larger insect.

9. [A.] *LOBATUS*.—Thorax acutely emarginate before the middle of the edge, without elevated lines behind.

Inhabits Indiana.

Body fuscous, granulated: head with the projection before the eyes rather obtuse, tip robust, obtuse; antennæ, third joint longer than the second: thorax quadrilineate before the middle; lateral edge acutely emarginate before the middle, anterior angles lobi-



Body rufous, somewhat polished; minutely rugulous, much depressed: head fuscous, excepting the prominent lobe or nasus which is subacute, tubercle before the eyes scarcely prominent, obtuse: thorax brown behind; anterior angles rather prominent and rounded; lateral edge widely emarginate: scutel brown, convex; hemelytra brown at base, fuliginous towards the tip.

Length three-twentieths of an inch.

Resembles the *levis* Fabr., but the hemelytra are not dull white on the margin; and the tubercle before the eyes is not prominent, as represented by Curtis. [808]

#### REDUVIUS Fabr.

1. *R. LINITARIS*.—Black, thoracic and abdominal margin, basal margin of the hemelytra, coxæ and pectoral spots sanguineous.

Inhabits Indiana.

Body black, somewhat hairy: thorax transversely impressed before the middle; a narrow sanguineous margin all around: scutel with a narrow sanguineous margin: hemelytra with the basal third of the costal edge dilating a little on the humerus, sanguineous: abdomen on the superior and inferior margin sanguineous: feet anterior pairs, trochanters and above each foot on the pectus, sanguineous; posterior tibiae slightly curved near the tip, and with a hairy dilation nearly equal to the diameter of the tibiae.

Length to tip of hemelytra seven-tenths of an inch.

Both this and the following species have many points of agreement with the Fabrician description of *crassipes*, which, however, is "fuscous:" "thorax margine laterali et postico tenuissime rufo. Scutellum nigrum." It is the anterior pairs of the tibiae that are robust and they exhibit on the anterior tip a groove to receive the tarsi.

[Belongs to *Apiomerus*.—UHLEB.]

2. *R. VENTRALIS*.—Brown-black; posterior margin of the elytra, and abdomen sanguineous, the latter with lateral black spots and lateral vittæ beneath.

Inhabits Missouri.

Body brown-black, somewhat hairy: thorax transversely impressed before the middle; anterior portion inequal; posterior portion margined each side and behind narrowly with sanguine-

ous : hemelytra with a rufous corium : abdomen sanguineous, with large marginal quadrate black spots above and beneath and dilated lateral black ventral vittæ : coxæ sanguineous : not remarkably distinguished.

Length about two-fifths of an inch.

The feet are not remarkably dilated as in *crassipes* F. : the species is also described to have "elytra fusca basi parum rufa" "corpus nigrum pectore utrinque punctis, abdomine margine rubris" "pedes incrassati," &c. I owe it to the kindness of Nuttall.

3. R. ACUMINATUS. Yellow, dusky along the middle; head vesicular behind; hairy.

Inhabits Indiana.

[801]

Body honey-yellow, very hairy : head short, almost rounded, sub-equally divided by a deeply indented line behind the eyes ; posterior lobe vesicular, somewhat inflated, short ; antennæ fus-cous, pale at base : rostrum, basal joint longer than the second and third together : thorax subequally divided by a deeply in-dented line ; anterior lobe somewhat longer, deeply divided by a longitudinal line ; posterior portion with an indented line before, and a blackish disk : scutel with three elevated lines and termi-nating in an acuminate spine ; hemelytra dusky along the middle ; anterior tibiæ a little dilated at tip : beneath with a broad, piceous vitta each side and a carinate line along the middle.

Length one fifth of an inch.

When alarmed, the basal joint of the antennæ, which is nearly

appearance of a double head; the impressed line of the thorax is on the posterior submargin, and the anterior impressed line is very obvious.

5. *R. INSIDIOSUS*.—Black; hemelytra pale at base of the corium; membrane milky-white.

Inhabits United States.

Body very small, black, punctured; antennæ whitish, somewhat hairy; basal joint blackish; second joint longer than the third; fourth joint as long as the third, a little dilated and compressed: thorax minutely rugulous transversely and with a slight transverse [802] indentation: scutel transversely rugulous: hemelytra yellowish-white on the corium at tip of which is a large, triangular, blackish spot; membrane milky-white: feet whitish; thighs, excepting their tips, black.

Length more than one-twentieth of an inch.

This is a very common little species in almost every part of the Union, on flowers. The large triangular black hemelytra spots are very conspicuous. The antennæ are rather short and robust. The lateral edge of the thorax is not interrupted.

6. *R. MUSCULUS*.—Black; hemelytra white, corium and membrane blackish at tips; feet honey-yellow.

Inhabits North-west Territory.

Body small, unarmed, black, somewhat polished: antennæ ———: thorax a little contracted on the anterior margin, almost like a short neck; on the middle an obtusely impressed, but not profound band, behind which the surface is minutely wrinkled; posterior margin deeply and obtusely emarginated: scutel rugose towards the depressed tip: hemelytra, whitish, hyaline; corium with a large blackish spot occupying the posterior half; membrane dusky towards the tip: feet honey-yellow; tarsi dusky at tip.

Length to tip of hemelytra over three-twentieths of an inch.

Resembles the preceding, but it is larger, the head more elongated and otherwise very distinct.

7. *R. PECTORALIS* nob.—New species of *N. Amer.* Ins. found by J. Barabino. [Ante, p. 306.] A complicated spine beneath the eye and a projecting spine each side of the pectus before.

## PETALOCHEIRUS Beauv.

1. *P. CRUCIATUS*.—Sanguineous, thoracic spot, scutel and hemelytra black; scutel bifid at tip.

Inhabits United States.

Body sanguineous: head black behind the eyes; antennæ black: thorax with a longitudinal impressed line extending nearly to the base and forming a cruciate mark with the transverse line; an irregular black spot on the disk; scutel rugulose, lip [tip] orbicularly bifid: hemelytra black; humerus yellowish: pectus and postpectus black: feet whitish; thighs at tip and tibiæ [803] at tip and base blackish; tarsi dusky; rostrum pale, second joint blackish.

Length half an inch.

I have taken this insect in Indiana and Missouri, and Mr. Oemler sent me a specimen from Georgia.

[This is *Ectrychotes bicolor* H. Schäffer, 8, tab. 266, fig. 822.—UHLER.]

2. *P. BIGUTTATUS* nob., New Sp. of N. Amer. Ins. found by J. Barabino, p. 13. [Ante, p. 307.] Hemelytra with a yellow spot beyond the middle and another at base.

## NABIS Latr.

1. *N. PURCIS* Drury (Cimex) Ins. V. p. 63, pl. 45, f. 4. I took many specimens in Georgia and Florida.

[Belongs to *Hammatacerus*—UHLER.]

line: posterior portion pale; hemelytra hardly longer than the anterior portion of the body.

Length to tip of hemelytra seven-tenths of an inch.

This insect was sent to me by Mr. Barabino. It closely resembles our common species represented in the Am. Entom. vol. 3, pl. 47, but is much smaller, and the feet have no appearance of annulations.

3. [2] *P. ERRABUNDA*.—This is so closely allied to *P. vagabunda* Fabr., that I give it a distinct name with much hesitation; nevertheless the anterior thighs are somewhat less elongated, with the two basal spines much more prominent than the others; the abdomen is immaculate, the annulations of the feet are much more obvious; the lateral carinate line of the thorax has a prominence like an obtuse spine before: in these characters it differs from the *vagabunda*: but in the spotted appearance of the hemelytra and the form and magnitude of the scutellar spines it resembles that species.

[A synonym of this species is *P. maculata* Hald. Proc. Ac. Nat. Sc. Phil., 3, 151.—UHLER.] [804]

#### ACANTHIA Schr. Latr.

1. *A. LIGATA*.—Black, with yellowish spots; exterior margin of the thorax and hemelytra yellowish.

Inhabits Indiana.

Body black: head with yellow orbits; thorax with an indented spot before the middle: lateral margin yellow with a black edge; at base two yellow spots: scutel with a yellow spot on the lateral margin near the base and two other spots or abbreviated lines near the tip: hemelytra with yellow spots; a yellow lateral margin and black edge; membrane fuliginous, with a transverse series of dull yellowish, oblong spots, and a yellow marginal spot: feet pale with one or two longitudinal black lines, which on the thighs are more or less dilated: venter, segments on their posterior margins pale yellow.

Length to tip of hemelytra one-fourth of an inch.

2. *A. HIRTA*.—Hairy, brownish, darker before.

Inhabits Indiana.

Body densely hairy, dull yellowish-brown or fuliginous: head a little darker at base: thorax blackish before the transverse line:

scutell blackish : hemelytra conspicuously hairy, with a [few] dull yellowish spots, as well on the membrane as the corium : pectus a little varied with black ; remaining inferior surface including the feet immaculate.

Length to tip of hemelytra under one-fourth of an inch.

This species may be recognised by its more obviously hairy vesture ; its color is also paler than usual in this genus.

3. *A. LUGUBRIS*.—Black ; membrane of the hemelytra, obtusely [obsoletely] spotted.

Inhabits Missouri.

Body black, subopaque : head between the antennæ with three yellowish points : antennæ first and second joints dull yellowish before : thorax and scutell immaculate : hemelytra immaculate on the corium, or with an obsolete dull yellowish point on the middle of the tip ; membrane with two or three obsolete dull yellowish spots, [on the ?] inner margin and tip : beneath with a yellowish spot before each of the anterior feet ; feet pale yellowish ; tibiæ and tarsi more dusky : thighs, particularly the anterior and posterior pairs, with a more or less dilated black [805] line toward their tips : coxæ black : anterior pair yellowish at tip, remaining pairs slightly tipped with yellowish.

Length to tip of hemelytra less than three-tenths of an inch.

For this species I am indebted to Nuttall, who obtained it in Missouri.

4. *A. HUMULIS* [*HUMILIS*].—Black, hemelytra with a yellowish margin and three spots.

large spot on the middle of the tip of the hemelytra, that does not exist in this species.

The *interstitialis* is much like the *littoralis* Fabr., but in none of my specimens of the latter is there a large yellowish spot on the middle of the tip of the corium.

5. A. CONFLUENTA [CONFLUENS].—Black; membrane of the hemelytra with a blackish band.

Inhabits United States.

Antennæ pale at base: head and thorax immaculate: corium with a large marginal spot before the middle and another at tip; two small spots [where?]; membrane with fuscous nervures and a continuous, blackish, arquated band on the middle: feet whitish; tarsi with blackish tips; thighs with an obsolete brown line: venter whitish at tip.

Length to tip of hemelytra one-fourth of an inch.

The band of the membrane does not reach the inner margin.

It is equal in size to *ligata*.

[806]

#### HYDROMETRA Latr.

H. LINEATA.—Fuscous; hemelytra dull whitish with black nervures.

Inhabits United States.

Body fuscous, or brown, more or less deep: hemelytra dull whitish or dusky, with black nervures: wings opake white, with black nervures: tergum pale, quadrilineate with black; two of the lines on the edge and the interval between the two inner lines dull whitish or bright yellow; the incisures of the segments more or less black: beneath and feet obscure yellowish: thorax with a more or less obvious pale line.

Length seven-twentieths of an inch.

This is very much like the *stagnorum* F., but the hemelytra are not testaceous, and there is no thoracic impressed line.

[Male ♀] Body blued-black; thorax with a pale line; antennæ and feet dark honey-yellow; tergum and venter without lines.

Var. a. *australis*. Head beyond the eyes a little longer and a little more dilated at tip; second joint of the antennæ a little more dilated at tip: abdomen with five lateral whitish points.

Inhabits New Orleans.

## GERRIS Latr.

1. *G. REMIGIS*.—Dark olivaceous; thorax rounded behind, without an elevated line.

Inhabits United States.

Body dark brownish-olivaceous; thorax transversely rugulose without much appearance of a dorsal raised line: a dull ochraceous and indented line before; posterior margin regularly and obtusely rounded with but a very narrow depressed margin: tergum with a black line on the middle, in which is a series of obsolete gray lines; lateral margin with a series of grayish points or short transverse lines: beneath with a silvery sericeous reflection, an impressed line on the anterior part of the pectus behind the anterior feet.

Length half an inch.

A great similarity exists between some of the species of this genus, and I have ventured to separate this species from the *paludum* F., which is said to have an elevated line on the thorax and another on the pectus and postpectus. [807]

The thorax on the posterior segment is generally obtusely tinged with dull yellowish, with a blackish longitudinal line in the middle.

Var. a. Thoracic elevated line rather more obvious: grey lines of the middle of the tergum more distinct.

Inhabits Mexico.

2. *G. MARGINATUS*.—Thorax with an elevated line: behind



Much smaller than the preceding, and more slender, of a darker color; abdominal margin of a different color, and the posterior margin of the thorax is broadly depressed. I obtained an individual, and Nuttall gave [me] one which he took in Missouri.

3. *G. CANALICULATUS*.—Above brownish; beneath yellowish, with a pectoral groove extending to the venter.

Inhabits Georgia.

Head dark brown, with a silvery line from the eye to the antennæ: antennæ honey-yellowish and feet of the same color, the tarsi dusky: thorax dull yellowish or dull fulvous, darker each side, with a dorsal dull fulvous line and lateral margin, beneath which is a double black line enclosing a silvery one: hemelytra brown with black nervures: tergum fulvous with a black lateral line and yellowish margin: terminal spines even with the tip of the tail: beneath yellowish fulvous: pectus with an obvious groove, extending to the venter, and in which behind is a blackish line.

Length less than two-fifths of an inch.

[808]

Differs from *marginatus* nob. in having an obvious groove beneath extending to the venter. The whole inferior [surface] also is yellowish, with the usual silvery reflection: the posterior depressed margin of the thorax is not so wide as in that species, and has no raised line.

#### NAUCORIS Geoff. Latr.

1. *N. PROFUNDA*.—Oval, dark greenish, rugulose; inferior membrane velvet black.

Inhabits Mexico.

The whole surface is covered with a minute, confused roughness; the form is rather dilated oval: thorax profoundly emarginate to receive the head; posterior submarginal line very distinct; lateral margin depressed: posterior angles obtusely rounded: hemelytra with the covered membrane deep velvet black: tergum dull yellowish with a blackish line on the edge and spots on the margin: beneath blackish fuscous: feet greenish; anterior pair of thighs dilated, triangular, ciliated with golden hair.

Length two-fifths of an inch.

The *femorata* Beauv., is less dilated, polished, the head larger, and less profoundly inserted into the thorax, the thorax is also not marginally depressed and its angles are not obtusely rounded as in this species. It was taken by Wm. Bennett and presented to me by Mr. Maclure.

2. *N. STYGICA*.—Black, front quadrilineate.

Inhabits Georgia.

Body oval, brown-black, rather rough: head crenate on the front so as to form four denticulations: eyes rounded, rather prominent: thorax not emarginate before, with a slightly depressed margin behind; anterior thighs dilated triangular: hemelytra with oblique lines; they appear united at the suture.

Length three-tenths of an inch.

I have but one mutilated specimen which was sent to me by Mr. Oemler. If I am not deceived by this specimen, the species is apterous and the hemelytra are united by a rectilinear suture, which will require the formation of a separate genus which may be named *Nerthra*. [809]

#### BELOSTOMA Latr.

1. *B. FLUMINEA*.—Fuscous; head before the eyes attenuated; feet spotted.

Inhabits United States.

Body rather long ovate, grayish or fuscous: head rapidly tapering from the anterior canthus of the eyes to the tip, forming in that part an equilateral triangle, of which the tip is ob-

Savannah and it is found in Pennsylvania and in Indiana and Louisiana.

Var. *a. immaculata*. Much smaller; lateral margin of the thorax depressed and slightly reflected; feet immaculate.

Length half an inch.

Most probably a distinct species, but I have seen but one specimen.

As the large North American species does not appear to have been noticed, I will add a description of it.

[Previously described as *B. Boscii* Serv. Enc. Meth. 10, 278 : *Zaita Boscii* Amyot and Serv. 430 : *Perthostoma auruntiacum* Leidy, Journ. Acad. Nat. Sc. Phil. 2d ser. 1, 62. It really belongs to the latter genus, and not to *Zaita*.—UHLEB.]

2. *B. GRISEA*.—Oblong-oval; head before the eyes very short, not attenuated; beneath with three blackish vittæ.

Inhabits United States.

Body oblong-suboval, slightly wider behind the middle, grayish-brown varied with fuscous or blackish, particularly on each side of the disks of the thorax and scutel: head between the eyes hardly tapering from the base to the tip: from the anterior canthus of the eyes to the tip, shorter than broad, not narrowed: [810] thorax, lateral edge rectilinear: pectus and postpectus yellow, with three broad black vittæ, which become more dilated, brown and less obvious on the abdomen: feet obsoletely subannulate.

Length two inches and one-fifth; greatest breadth less than nine-tenths of an inch.

Occurs in various parts of the Union. I received a specimen many years since from Dr. F. V. Melsheimer labelled *Nepa grisea*, which name I retain. It differs from the preceding in magnitude, in the form of the anterior part of the head, &c. It is much like the *B. grandis* Linn., but is hardly half as large, and if Stoll's figure of that insect has any pretensions to accuracy, it is in other respects quite distinct. In that figure the greatest breadth is at the base of the elytra, &c.

It inhabits from Canada to Florida.

[Subsequently described as *B. annulipes* H. Schäffer, 8, tab 258, fig. 803 and 804: also as *B. americanum* Leidy, Journ.

Acad. Nat. Sci. Phil. 2d ser. 1, 58. It is found from Puget Sound to Mexico, and from Maine to Florida, and thence to Brazil. Dr. Leidy expresses the belief that it is only a variety of *B. grandis*, in which opinion I entirely coincide. Stoll's figure represents *B. indicum*, and should not have been cited for the present species.—UHLEB.]

3. *B. DILATATA*.—Dark grayish-brown, much dilated, ovate somewhat depressed: head obsoletely varied with dull-yellowish: thorax with the lateral margin very distinct; anterior edge obviously elevated; impressed line of the posterior submargin well defined, not abbreviated; feet somewhat annulated; venter tinged with rufous.

Inhabits Mexico.

Length one inch and one-tenth.

Resembles *fluminea* nob., but is much larger and proportionally much more dilated. It was found between Vera Cruz and Jalapa by Wm. Bennett and presented to me by Mr. Maclure.

[This is the *Paysan american* Stoll, Punaises, 11, pl. 1, fig. 1; Amyot and Serville have given it the name of *Stollei*. It belongs to *Zaitia*, and was described in Stanbury's Expedition to Great Salt Lake as *Z. bifoveata* Hald. 370, pl. 10, fig. 1. It is also figured by H. Schäffer (9, 292) as *Z. Stollei*.—UHLEB.]

#### CORIXIA Geoff. Latr.

1. *C. CALVA*.—Thorax eight or nine lined: lines of the hemelytra subequal.

Inhabits United States.

Body blackish, with slender, yellowish transverse lines: head greenish-yellow, with a broad dusky line on each side of the middle, not extending to the orbit and hardly reaching the vertex, but dilated over the mouth: thorax with twelve to sixteen lineations: hemelytra minutely wrinkled longitudinally; transverse lineations not larger on the inner margin; lateral groove pale fulvous, particularly towards the base where it is hooked, and on the middle it has an oblique black spot: tergum at base sanguineous: pectus and postpectus black; feet yellowish; anterior pair black at tip: intermediate pair black on the tibiæ and the tip of the thighs; posterior pair, tibiæ and tip of the tarsi black: venter at base sanguineous.

Length two-fifths of an inch.

This was found in Mexico by Wm. Bennett, and sent me by Mr. Maclure. In point of size it resembles *interrupta* nob., which, however, is but obsoletely wrinkled at the base of the hemelytra: its transverse lineations are much more undulated, and the abdomen is pale yellowish beneath; the feet also are immaculate.

3. *C. MERCENARIA*.—With the line subequal and an immaculate space at base.

Inhabits Mexico.

Body smooth, pale yellowish; head immaculate, convex before, and with an obsolete carina and a few punctures: thorax with about eight or nine transverse black lines: hemelytra with numerous, equally slender, transverse somewhat confused, black lines: a large immaculate space at base; channel of the exterior margin interrupted, immaculate, excepting a dusky dot at tip and a less obvious one beyond the middle; tip rounded: venter blackish, lateral margin and posterior margins of the segments whitish.

Length one-fifth of an inch.

On comparison with the *alternata* nob., it may be distinguished by the equality of the lineations of the hemelytra, those of that [812] species being much more regular and wider on the inner anterior margin than on other parts of the hemelytra. The thorax and hemelytra also of that species are minutely rugulose. Passing through the market in the city of Mexico I obtained a

few specimens from the quantity of at least a peck, exposed for sale by an Artec woman. They are made use of as food.

It is larger than *calva* nob., and further distinguished by the immaculate base of the hemelytra.

NOTONECTA L. Latr.

1. *N. UNDULATA*.—Whitish; scutel and band blackish.

Inhabits Missouri and Indiana.

Body greenish-white: thorax dusky or blackish behind: scutel velvet black, a slight dull fulvous spot each side near the base and another more or less dilated, at tip: hemelytra with an undulated, fuscous band behind the middle; tip simply emarginate, not fissile: beneath blackish, varied with yellowish: feet greenish.

Length two-fifths of an inch

Var. a. Small spots at base of the scutel, none.

This approaches the description of *N. americana* F., which, however, is said to be "postice nigro" corresponding with specimens in my cabinet from Mexico. The black color of the posterior portion of the thorax is only transmitted from the part of the scutel which is beneath it.

Var. b. Yellowish, or greenish-white; beneath varied with blackish and yellowish: feet green: hemelytra with three lateral, longitudinal brown spots; a lateral, submarginal blackish line.

Var. c. Scutel black: hemelytra blackish with a line at base

## Correspondence relative to the Insect that destroys the Cotton Plant.

TO THOMAS SAY, ESQ.,

*Prof. of Natural History, University of Pennsylvania.*

Sir:—I have for several years paid some attention to an insect which has infested our cotton, whose character and species I have been very desirous of ascertaining. I addressed a letter to Mr. Stephen Elliott on this subject, and he referred me to you, not being able to give me the description wanted. I also sent to Dr. Samuel Mitchell of New York, but he likewise was not able to give any satisfactory account, and referred me to Mr. Le Cont[e]; but owing to some adventitious circumstances, I never heard from him, and have now taken the liberty of addressing you, although an entire stranger, and must make my love of the sciences generally, as well as my desire to be acquainted on this particular point, my excuse. I have therefore sent a box containing the moths. They were put into the box in the caterpillar state, with a few cotton leaves to feed on. After a time they went into the pupa state, and finally became moths. I have written an essay on these insects which is incomplete, from not knowing their scientific name and character. If you will so far oblige me, please address a few lines on the subject to your obedient servant,

C. W. CAPERS.

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*New Harmony, Nov. 1, 1827.*

Sir:—I received your interesting communication of the date of Jan. 21, not until Thursday last, and how to account for its long detention I know not. It was brought by private conveyance in due time from Philadelphia, so that the delay must have occurred in that city, or on its way there. Any future package you may wish to send me, may be confided to the care of a house in New Orleans.

I have carefully examined the contents of the box which accompanied your letter. It contained several cotton moths, which are much injured, but as far as I am enabled to judge by their remaining characters, they constitute a new species, of which I have made the following description :

NOCTUA Fabr.

N. XYLINA.—Olivaceous, tinged with vinaceous; superior wings with a black spot. [814]

*Description.*—Head vinaceous, with a small whitish tuft before: antennæ pale honey-yellow, of moderate length, covered with scales above and short hair beneath: labrum rounded, small: mandibles conic, whitish, with a fascicle of sericeous fulvous hair on the inner base: maxillæ as long as the antennæ, papilaceous towards the tip: palpi densely covered with short, equal scales, which are intermixed rufous and white; second joint much longer than the first; third joint very distinct, conic, linear; thorax vinaceous with more or less of olivaceous, particularly on the sides: superior wings vinaceous towards the posterior margin obsoletely olivaceous; a little above and partly on the second bifurcation of the post costal nervure is an oblique sub-oval, blackish spot, in which are paler scales, forming almost a double pupil: posterior to this spot is an obsolete, much undulated, interrupted, dull rufous line, reaching the anal margin near the middle and the costal margin at two-thirds the distance from the humerus: behind this line is a distinct one, and in some specimens a still less distinct one towards the base of the



Linn. Whether or not this is a confederate of the *xylina* in destroying the cotton plant, you are best able to judge; but I should rather suppose that its ravages are not particularly directed against that plant, and that its presence here is rather fortuitous.

One of the small vials contains a *Gryllotalpa Americana*.

I take the earliest conveyance for this letter, in hopes it may reach you early enough to be of some utility.

Yours, &c.,

T. SAY.

[From Contributions of the Maclurian Lyceum to the Arts and Sciences, vol. I. Philadelphia.]

**Notes on Capt. Le Conte's paper on "New Coleopterous Insects of North America," published in the first volume of the Annals of the Lyceum of Natural History of New York.**

Read April 23, 1837.

*Colaspis infuscata* Le C. is the *C. quadrinotata*.—See Journal of the Acad. Nat. Sc. P. vol. iii. p. 444.

*Anthicus murinipennis* Le C. is the *A. bicolor*.—See American Entomology, vol. i. pl. x. It is very closely allied to *Notocnus serricornis* of Panzer, No. 31. [39]

*Molorchus affinis* Le C. is the *M. bimaculatus*.—See Journal Acad. Nat. Sc. P. vol. iii. p. 428.

*Chrysomela scalaris* Le C. may possibly prove to be the *C. decipiens* of Weber, p. 52, notwithstanding Weber's description of the suture, which he says is "*brunneus*;" a specimen in my collection has a tinge of that color, and another has a slight appearance of the lateral thoracic indentations, which Weber attributes to his species. At any rate, I referred the species to that description until another insect could be found better adapted to it.

There can be no doubt respecting priority in relation to the

[From Contributions of the Maolurian Lyceum to the Arts and Sciences.  
Vol. I., Philadelphia, pp. 67—83.]

**A Description of some new species of Hymenoptera of the United States.**

Read March 3, 1828.

**AULACUS** Jurine.

**A. FASCIATUS.**—Wings violaceous with hyaline band.  
Inhabits Ohio.

Body black; thorax confluent punctured in transverse grooves; wings violaceous with a hyaline band on the middle, hardly reaching the anal margin; abdomen much compressed; oviducts longer than the abdomen, much incurved at tip.

Length half an inch.

[68]

**ICHNEUMON** Linn. Fabr.

**1. I. PARATA.**—Antennæ black with a whitish annulation; tergum yellow, with five or six blackish bands.

Inhabits Indiana.

Head yellow; disk of the vertex and the occiput black; antennæ black; basal and second joint beneath and 15, 16, 17, 18, 19 and 20 joints pale yellowish: thorax black; band on the collar, line on each side extending to the wings, and interrupted before, and a small quadrate spot on the disk, yellow; scutellum and a small spot behind it, yellow: metathorax, posterior disk, yellow; wings somewhat dusky with fuscous nervures; stigmata pale brownish; central cellule pentangular and transverse, not at all oblique, the superior side very short; tergum, basal segment with the basal incisure, and spot on the disk near the tip, black; remaining segments with a blackish band at their bases more or less emarginated in their middles; beneath yellow; pectus and postpectus with the transverse incisure, black; posterior feet, coxæ above, excepting at tip, thighs, excepting at base, tibiæ at tip and first and second joints of tarsi, black; venter with paler and less perfect bands than those of the tergum.

**Var. a.** Intermediate thighs black on their middle above.

Length two-fifths of an inch.

2. I. CONGINNUS.—Antennæ black with white annulations; tergum white with six or seven black bands.

Inhabits Indiana.

Head white; a broad black vittæ extending from the black occiput, two black abbreviated lines beneath the antennæ, each terminating near an indented point; mandibles brown at tip, a black line from their base to tip; antennæ black; 9 to the 17 joints inclusive, [69] white; collar yellow, anterior portion black; thorax with a narrow line before the wings widely interrupted before; a double much abbreviated white line in the middle; scutel and small transverse line behind it, white; metathorax with two longitudinal lines, on each side of which is a spine, and a lateral white line interrupted above; tergum yellow; terminal half of the first segment, and basal two-thirds of each of the others, black; pectus black; feet honey yellow; coxæ white; posterior feet, coxæ with a wide much indented black band; thighs blackish at base; venter somewhat dusky; central cellule of the wings as in the preceding.

♂ A single line beneath the antennæ and an irregular line above the mouth, black; double white line on the thorax widely separated; an abbreviated, oblique white line from the edge of the scutel towards the superior wings; tergum with the black band of the first segment not terminal; feet honey yellow; coxæ, excepting the posterior pair, white; tip of the tarsi black; oviduct blackish piceous, less than half the length of the abdomen.

Length over two-fifths of an inch.

wings and one or two spots behind; beneath with a white spot before the anterior and intermediate coxæ; tibiæ white lines on their exterior sides; posterior tarsi, first and second joints with a white line above.

Length more than half an inch.

Second joint of the maxillary palpi dilated as in *Peltastes* Illig.

4. I. VINCTUS.—Black: abdomen rufous.

Inhabits Indiana.

Body black; head above the antennæ and occiput, black; orbital line interrupted behind, and all beneath the antennæ except the incisure, white; antennæ, basal joints beneath, white; collar with a white line; thorax with a short line above the anterior wing and another below it, from the anterior extremity of these lines, a white line proceeds, and is interrupted before; two impressed dorsal lines obsolete behind; scutel and obsolete point behind it, white; wings, central cellule pentangular, transverse; metathorax with somewhat elevated rugæ, enclosing a pentangular space, from the angles of which abbreviated lines diverge, the two posterior of which terminate at the short tubercles; feet, anterior and intermediate pairs, pale whitish yellow, the coxæ white with a black spot behind, the thighs with a black line and tibiæ of the anterior pair also with a black line; posterior pair black, second, third and fourth joints of the tarsi, white; abdomen bright rufous, immaculate.

Length ♂ half an inch.

[71]

5. I. INQUISITOR.—Black; feet honey-yellow; posterior tibia white, binnulate with black.

Inhabits Indiana.

Body black; palpi whitish; thorax with a white spot on the anterior base of the superior wings; wings, central cellule quadrangular, longitudinal, narrowed a little at the tip; feet honey-yellow: posterior tibia white, a black annulus near the base and another somewhat larger at tip; joints of the posterior tarsi whitish, blackish at their tip: oviducts nearly as long as the abdomen.

Length one-fourth of an inch.

Preys upon the larva (of a *Bruchus*?) that feeds on the seeds of the *Clematis*.

6. I. PTERELAS.—Black; feet honey-yellow: oviducts elongated.

Inhabits Indiana.

Body black; immaculate; antennæ piceous beneath; palpi whitish: wings, central cellule subquadrangular, almost triangular, rather longitudinal; posterior tibiæ and tarsi dusky; oviducts nearly as long as the body, aculeus piceous.

Length three-fifths of an inch.

Belongs to the genus *Pimpla* Fab.

7. I. HILARIS.—Yellowish; head black, beneath the antennæ yellowish.

Inhabits Indiana.

Body yellowish, approaching honey-yellow; head above the antennæ and occiput black; beneath the antennæ and mouth yellow, a transverse black line above the mouth; antennæ dusky, yellowish beneath, and still darker above, shorter than the body; thorax with an obsolete, double, pale yellowish line; wings hyaline; central [72] cellule small, quadrangular, longitudinal, somewhat oblique, not distinctly narrowed at either end; posterior tarsi at their tip dusky: abdomen depressed: venter with a dusky spot near the tip.

Length ♂ nearly three-tenths of an inch.

8. I. MALACUS.—Body black; antennæ annulate with white, beginning at the tenth joint and terminating at the eighteenth; joints very distinct; wings blackish; small cellule with one bulla, large anal cellule with three bulla and two short processes; me-

feet: feet yellow; posterior thighs tinged with rufous; posterior tibiæ rufous at tip; abdomen rufous, with black incisures.

Length over one-fifth of an inch.

10. I. BIFASCIATUS.—Ferruginous wings dusky, bifasciate.

Inhabits Indiana.

Body ferruginous; antennæ somewhat tinged with whitish beyond the middle and fuscous at tip: thorax circumscribing incisure black; wings dusky with a hyaline [73] band hardly beyond the middle and an abbreviated one nearer the tip; stigma pale ferruginous; inferior wings dusky, with a semifasciate on the middle with hyaline: oviducts black; pectus incisures black; posterior tibiæ blackish at tip.

Length two-fifths of an inch.

11. I. MORULUS.—Black; antennæ with a whitish annulation.

Inhabits Indiana.

Body black: antennæ with a white annulation beginning at the tenth or eleventh joint and ending at the sixteenth or seventeenth; wings violet black; recurrent nervures of the small cellule, with each a salient angle; on the anterior one a whitish dot and on the posterior two white dots: a dot also on the posterior nervure of the small cellule; metathorax with elevated lines and each side behind an acute angle; abdomen with a short petiole, which is lined: second segment opaque with confluent punctures, larger towards the base; color blue-black; oviduct hardly obvious.

Length three-fifths of an inch.

Second joint of maxillary palpi dilated as in *Peltastes* Illig.

12. I. RESIDUUS.—Yellowish; antennæ white in the middle and black at tip.

Inhabits Indiana.

Body yellowish, tinged with rufous: antennæ not longer than the thorax, the ten basal joints color of the body, 11, to 16 whitish, the remaining joints black; wings hyaline; central cellule pentangular; posterior tibiæ at tip, and posterior tarsi, dusky.

Length more than one-fourth of an inch.

[74]

## ANOMALON Jurine.

1. *A. SEXLINEATA*.—Black; feet rufous; metathorax with six raised lines.

Inhabits Indiana.

Body black; antennæ piceous beneath, rather shorter than the body; palpi yellowish; thorax subtrilobate, the impressed lines being deep and wide; wings a little dusky, a small whitish spot on the beginning of the carp: central cellule none; metathorax densely punctured, with six longitudinal, slightly elevated lines, two of which are on the side; feet rufous; posterior tibiæ and their tarsi dusky; tergum, first segment densely and finely punctured; oviduct hardly as long as the abdomen.

Length three-twentieths of an inch.

2. *A. HUMERALE*.—Black; antennæ with a white cinctus.

Inhabits Indiana.

Body black, punctured; antennæ, 12, 13, 14 and 15th joints white; thorax with an acute tubercle on the humerus; somewhat elongated before the wings; metathorax with two acute tubercles each side at tip; tergum, second segment with an impressed oblique line each side at the basal angle; oviduct longer than the abdomen; knees white.

Length ♀ more than half an inch.

3. *A. MELLIPES*.—Black: feet honey-yellow.

Inhabits Indiana.

Body black, polished; palpi whitish; wings hyaline, with a



at tip; small central cellule angulated at the superior basal angle and with a very slight process, its terminal nervure almost obliterated on the outer half, its outer nervure almost obliterated in the middle and white in that part: the two terminal connecting nervures forming an acute angle; pleura paler than the thorax; abdomen, second segment hardly as long as the first and longer than the third.

Length seven-twentieths of an inch.

2. *O. ANALIS*.—Reddish-brown: head above black, beneath the antennæ yellow; abdomen black at tip.

Inhabits Indiana.

Head above the antennæ black: beneath the antennæ yellow: occiput black, reddish-brown each side: antennæ dark reddish-brown, almost black, at base black: beneath somewhat paler, darker towards the base, radical joint yellow at base; thorax reddish brown, with large blackish disk, divided into three wide lines by two impressed lines; sutures of the scutel and metathorax black; wings the larger central cellule obtuse at tip; smaller central cellule with a small angle at tip, where it is widest, very obtusely rounded at the superior basal angle; do not meet and form an angle, carpal spot slender; pectus black; posterior thighs blackish at base, their coxæ with [76] a black spot, their tibiæ dusky at tip and their tarsi yellow; abdomen black at tip and on the superior edge of the second segment, which is at least as long as the first segment.

Length ♀ nearly three-fifths of an inch.

3. *O. GEMINATUS*.—Yellowish; vertex with a black spot; large central cellule of the wings obtuse at tip.

Inhabits Indiana.

Body dull yellowish; head yellow; vertex black: antennæ somewhat shorter than the body, tinged with brown, the first joint yellow; wings hyaline, with fuscous nervures and honey-yellow somewhat dilated carpal spot: large central cellule obtuse at tip, the nervure of the tip double; smaller central cellule very obtusely rounded at the superior basal angle; pleura and pectus pale yellowish; abdomen, second segment obviously shorter than the first, and not longer than the third.

Length about two-fifths of an inch.

This species closely resembles *O. bilineatus* nob., but is much smaller, and the arrangement of the wing-nervures proves it to be a different species.

4. *O. EMARGINALUS* [EMARGINATUS].—Black; antennæ fuscous; feet honey-yellow.

Inhabits Indiana.

Body black, sericeous with short hair; head convex beneath the antennæ, at the base of which the head is much more prominent than immediately above the antennæ where the head is indented; antennæ short, above dark fuscous, beneath paler, first joint rather longer; palpi white: thorax immaculate; metathorax with four longitudinal slightly raised lines; wings hyaline with fuscous nervures and carpal spot; larger central cellule obtuse or [77] rather truncated at tip, and emarginated by the curvature of the radial cellule; smaller cellule with a small angle at tip, where it is widest, and gradually tapering to its opposite extremity without any curvature: feet honey-yellow, short, anterior coxæ with a whitish reflection; abdomen short, almost sensible, not compressed.

#### ALYSIA Latr.

1. *A. RIDIBUNDA*.—Rufous; head, wings and tip of the tergum, black.

Inhabits Indiana.

Body yellowish-rufous; head black, a rufous spot each side of the mouth; antennæ longer than the body; wings blackish; central cellule large, longitudinal, acute before, nervure connect-

## BRACON Jur. Fabr. Latr.

1. *B. EXHALANS*.—Black; abdomen sanguineous.

Inhabits Indiana.

Head black; palpi whitish; antennæ shorter than the [78] body; thorax black; wings blackish, second cubital cellule longitudinal, quadrangular, acute at base, nervure connecting with the carpal spot placed obviously before the middle of the cellule; feet blackish; abdomen sanguineous; oviduct shorter than the body, blackish; metathorax simple pale reddish.

Length more than three-twentieths of an inch.

2. *B. HONESTOR*.—Yellowish-rufous; wings blackish, with a whitish band and tip.

Inhabits Indiana.

Body rufous, slightly tinged with yellow; antennæ rather longer than the body; thorax somewhat bilobate, the posterior segment being canaliculate; wings dusky, with black nervures and rather large carpal spot; a narrow, transverse, whitish band beyond the middle, and whitish tip; posterior tibiæ dusky, whitish at base and at the terminal incisures; abdomen clavate, almost pedunculated; oviduct longer than the abdomen.

Length one-fifth of an inch.

Second cubital cellule elongated.

3. *B. TRUNCATOR*.—Pale honey-yellow; vertex with a black spot.

Inhabits Indiana.

Body pale honey-yellow, polished, impunctured; antennæ fuscous, honey-yellow at base; stemmata in a black spot; palpi whitish towards the tip; metathorax slightly punctured; abdomen much compressed, truncate.

Length nearly one one-fourth of an inch.

## PERILAMPUS Latr.

1. *P. TRIANGULARIS*.—Green and blue; tarsi yellow; wings dusky at tip. [79]

Inhabits Indiana.

Body polished; head green with a violaceous reflection, each side before vertically striate; occiput transversely and longitudi-

nally striated, violaceous, the collar punctured, green; scutel much elongated, entire; wings dusky on the apical half; abdomen very short, wide, triangular, very convex above and beneath; anterior half violaceous, posterior half, green with a violaceous reflection; tarsi yellow.

Length one-fifth of an inch.

2. *P. HYALINUS*.—Green; wings hyaline.

Inhabits Pennsylvania.

Body green punctured; scutel much elongated, slightly emarginated; wings hyaline, immaculate; abdomen very short, wide, triangular, very convex above and beneath, violaceous; tarsi yellowish; anterior tibiæ honey-yellow.

Length less than one-fifth of an inch.

Differs from the preceding in being destitute of the dusky wing tips and in having punctures instead of striæ.

#### SPALANGIUS Latr.

*S. POLITUS*.—Bluish-green; tergum with a cupreous band at base.

Inhabits Virginia.

Body bluish-green, varied with violaceous, densely punctured; front grooved to receive the basal joint of the antennæ; flagellum fuscous; wings hyaline, slightly dusky; scutel somewhat prominent; abdomen a little depressed; first segment brilliant cupreous; incisures glabrous; terminal segment longer than the others together, forming at tip a narrowed, carinated black [80] process

## SERLION Latr.

S. **TERMINALIS**.—Antennæ, terminal joint white; wings unifasciate.

Inhabits Indiana.

Body somewhat piceous; head yellowish; antennæ broken, blackish; first joint nearly as long as the others together; terminal joint dilated, compressed, subtriangular, white; wings with a broad dusky band; intermediate tarsi white except at tip.

Length more than one-twentieth of an inch.

## PSILUS Jur.

1. P. **CILIATUS**.—Black; feet whitish; hairs of the wings elongated.

Inhabits Indiana.

Body black, polished; antennæ with an oblong oval acute club, at base honey-yellow; petiole of the abdomen and feet honey-yellow; wings deeply ciliated, the hairs longer than the transverse diameter of the wings.

Length less than one-twentieth of an inch.

2. P. **OBTRUSUS**.—Black; feet whitish, thighs black in the middle.

Inhabits Indiana.

Body black, polished; antennæ fuscous; anterior wings white and very obtuse, finely ciliated; ciliæ very short; feet whitish; thighs black, white at base and tip; coxæ black.

Length nearly one-twentieth of an inch.

## PLATYGASTER Latr.

3. P. **PALLIPES**.—Body black; antennæ fuscous, moniliform: basal joint honey-yellow; wings hyaline; abdomen polished, much depressed; widest near the tip and obtuse, gradually and rectilinearly a little narrowed to the base: feet whitish-yellow.

Length one-thirtieth of an inch.

## BETHYLUS Latr.

B. **ÆMIFERUS**.—Black; tergum with elongated white hairs. Inhabits Indiana.

Body entirely black, immaculate, with short hairs; head

covered with discoidal punctures; tergum polished, with a few elongated, rigid, white hairs, as long as two of the segments taken together.

Length seven-twentieths of an inch. [81]

DRYINUS Latr.

D. BIFASCIATUS.—Yellowish; wings bifasciate.

Inhabits Indiana.

Body honey-yellow, varied with blackish; anterior thighs dilated; wings with two fuscous bands, the apical one broader.

Length rather more than one-fifth of an inch. [82]

CHRYSIS Linn. Latr.

1. C. PACIFICA.—Green; anal segment mutic; tarsi fuscous.

Inhabits Indiana.

Body green with a slight bluish tinge, with short hairs; antennæ, five or six terminal joints fuscous; wings hyaline, a little brownish on the costal margin beyond the stigma; tergum more particularly tinged with bluish; anal segment rounded, subtruncate, unarmed; tarsi fuscous.

Length three-tenths of an inch.

2. C. CARINATA.—Bluish; abdomen subtridentate.

Inhabits Indiana.

Body greenish blue varied with purplish; front, from the antennæ to the middle, with numerous whitish hairs; antennæ fuscous, green at base; metathorax, lateral tubercles acute; middle termination subacute; tergum, anal segment carinate, the carina

## TIPHIA Fabr. Latr.

**T. TRANSVERSA.**—Blue-black, somewhat hairy.

Inhabits Indiana.

Body black, with a slight bluish or purplish reflection; with numerous whitish hairs; immaculate, punctured; antennæ black, opaque; mandibles piceous at tip; palpi fuscous; wings a little dusky, hyaline; nervures black; apical lines of the second cubital cellule transverse, rectilinear; metathorax each side striated, above with three slightly elevated longitudinal lines and a posterior transverse one; abdomen, first segment narrower than the second, somewhat gibbous above and flat beneath, the incisure indented; remaining segment more hairy, ciliated; tibiæ and tarsi with silver hairs.

Length nearly half an inch.

[From Annals of the Lyceum of Natural History of New York. Vol. I., part 2; 1825. Pp. 249—268.]

Descriptions of new American Species of the Genera **BUPRESTIS**,  
**TRACHYS** and **ELATER**.

Read January 17, 1825.

**BUPRESTIS.**

1. **B. TRANSVERSA.**—Cupreous or blackish; elytra with striæ of punctures; a glabrous line between the eyes.

*Desc.* Body varying in color, from a dull cupreous to brownish black; head with large, confluent punctures, and a distinct elevated line extending transversely between the eyes: eyes distant: thorax with large confluent punctures, [250] two elevated glabrous lines forming a groove between them: an elevated line on each side originating on the anterior edge, and becoming obsolete at the middle of its length; a somewhat elevated, oblique line at the posterior angles; elytra entire, rounded at tip with regular striæ of punctures: beneath much punctured.

Length half an inch.

It is about the size of *B. longipes* nob. The sexes, of a very dark color, were sent me by Dr. J. F. Melsheimer, and I have a female, taken several years since, which is of a decided coppery tint, though somewhat dull; the color, therefore, cannot be relied upon; but the lines of punctures on the elytra, the form of the



extended towards the tip, where it gradually approaches the scutellum; scutellum transverse and transversely carinated; beneath dark-green, polished on the venter; edge of the postpectus and venter with a dull fulvous line.

Length seven-twentieths of an inch.

The *quercata* Fabr., is described to be green, with a fuscous vitta on the elytra, and a spot on the thorax; it therefore differs [251] from the present insect. The surface of the elytra appears covered with minute imbricated points, which are more acute and obvious towards the tip.

[This and the three following belong so *Agrilus*; *B. quercata* is totally different, being an *Anthaxia*.—LEO.]

3. *B. ABOUATA*.—Dark bronze; elytra black; thorax with an elevated line at the posterior angles.

*Desc.* Body slender; head punctured, with a longitudinal indented line, and obsolete indentation each side on the front: thorax inequal, transversely confluent punctured; an elevated, arcuated line, extends from the posterior angle almost to the middle of the lateral margin: scutellum transverse and transversely carinated: elytra indented at base; at tip rounded and denticulated: beneath dark greenish, polished, particularly on the venter.

Length three-tenths of an inch.

Of a similar form to the preceding species; but it is altogether destitute of the marginal colored line of the thorax, and those of the elytra; the elevated line of the thoracic also angles distinguishes it. The imbrication of the elytra is similar to the preceding species.

4. *B. POLITA*.—Cupreous, polished; thorax with an elevated line at the posterior angles.

*Desc.* Body slender, highly polished, cupreous: head tinged with green, punctured; longitudinal indented line obsolete: antennae blackish: thorax a little inequal; transversely confluent punctured; an elevated arcuated line extends from the posterior angles almost to the middle of the lateral margin: scutellum transverse and transversely carinated: elytra indented at base; at tip rounded and denticulated.

Length rather more than one-fifth of an inch.

[252]

Found by Mr. Thomas Nuttall on the bank of the Mississippi river. In many of its characters it resembles the *arcuata*, but is

much smaller, and the color is altogether different; the indentation of the head also is hardly perceptible. It is rather larger than *geminata* nob., which, as I have ascertained, on close examination, has the elytra denticulated at tip.

5. *B. PUSILLA*.—Blackish-green; front without any obvious impressed line.

*Desc.* Body slender: head tinged with bluish, with obsolete rather distant punctures; excepting on the vertex, where they are rather large and confluent; frontal impressed line obsolete: antennæ black; thorax somewhat unequal; transversely confluent punctured; two slight, dilated indentations placed longitudinally on the disk, and a larger and more profound one on the lateral margin; an elevated, arcuated line extends from the posterior angle, almost to the middle of the lateral margin: elytra indented at base, at tip rounded and minutely denticulated, the denticulations not extending on the sutural or lateral edge.

Length less than three-twentieths of an inch.

This is so much smaller than either of the above species, as to be distinguished readily by that character, without resorting to any other. I detected it at the cantonment of Major Long's party, on the Missouri.

#### TRACHYS.

1. *T. OVATA*.—Ovate, black; head without an indented line; elytra without regular punctures.

*Desc.* Body very short, ovate, black: head without the usual

of a new genus *Metonius* Say, which is identical with *Pachyscelis*; *T. orata* Weber is a very different insect, belonging to *Brachys*.—  
LEC.]

2. *T. GRACILIS*.—Oblong blackish; elytra with regular series of punctures.

*Desc.* Body rather slender, oblong, blackish-brassy: head a little concave, but not profoundly so: thorax inequal, with a slight impressed line before, and a wide indented space occupying half the thorax behind; on each side is a raised, arcuated, obtuse line, extending nearly from one angle to the other: scutel moderate: elytra with regular series of rather large, profoundly impressed punctures, which are obsolete at tip.

Length less than three-twentieths of an inch.

A comparatively slender species. I found it on a myrtle bush at Senipuxten island, in September. It exhibits an unusual regularity in its series of punctures.

[This is the type of *Taphrocerus* Sol.; but the name under which it was known to him is the synonym *Brachys alboquittata* Lap. and Gory.—LEC.]

#### ELATER.

1. *E. ABRUPTUS*.—Black, covered with minute hairs: junction of the thorax and elytra deeply excavated.

*Desc.* Body black, polished, covered with minute punctures, which give rise to very short brown hairs which [254] in a particular light have a somewhat sericeous appearance: serratures of the antennæ and palpi dull rufous: thorax considerably convex, at the base abruptly curved downwards; the lateral spines are, however, horizontal: scutel convex, oval, making a considerable angle with the longitudinal diameter of the body; elytra with obsolete impunctured striæ, more distinct towards the margin and tip: base rather abruptly, very much decurved, so that, in conjunction with the form of the thoracic base, it exhibits a wide and deep excavation between the two parts of the body.

Length four-fifths of an inch.

Next in size to the *morio* and *levigatus* Fabr., of all the North American species I have yet seen. The latter species I believe to be only a variety of the former; it is equal in size, with the same form, impressed front, &c.; the only difference is, that one

has the elytra obviously striated, and the other has those striæ so far obsolete, that the elytra appear smooth to the eye.

[Belongs to *Ludius*.—LEC.]

2. *E. HEMIPODUS*.—Black; thorax convex, rather gibbous; thighs rufous.

*Elater fuscipes* Melsh. Catal.

*Desc.* Body black, with short hairs; head with an obsolete, impressed, arcuated line on the front; antennæ not serrated, black; basal joints dark piceous: thorax very convex, rather broadest in the middle, equally narrowed before and behind; lateral edge regularly arcuated, a little contracted near the posterior angles; no appearance of an impressed line; the interval between the thorax and elytra deeply indented; scutel oval, truncated at base: elytra striated, minutely punctured, slightly tinged with brassy: thighs dark rufous. [255]

Length eleven-twentieths of an inch.

This is a very different insect from the *fuscipes* Fabr.

[A species of *Asaphes* Kirby.—LEC.]

3. *E. UNICOLOR*.—Blackish-brown; antennæ simple; thorax short, narrowed before, and with an impressed line behind.

*Elater unicolor* Melsh. Catal.

*Desc.* Body blackish-brown, with short cinereous hair: head a little concave just above the interval between the antennæ and a longitudinal slightly impressed line: antennæ not serrated, third joint considerably longer than the fourth: palpi pale rufous: thorax somewhat convex, narrowed anteriorly by an

*Desc.* Body dark coppery, with short hairs: head with rather large, confluent punctures: antennæ rufous, robust, much serrated: palpi rufous: thorax distinctly punctured; a very obvious, obtusely indented line extends from the base to the anterior margin, where it is obsolete; posterior angles prominent, extending a little outwards: scutel orbicular: elytra striate, the striæ distinctly punctured: epipleura rufous: feet rufous: venter on the disk rufous. [256]

Length rather less than three-fifths of an inch.

Very distinct, and readily recognized.

[If this is not identical with *E. brevicornis* infra p. 399, which is the female of *Corymbites* appressifrons, it cannot be referred to any species known to me.—LEC.]

5. *E. PARALLELUS*.—Brown; thorax with the anterior angles dilated, and as wide as at the posterior angles.

*Elater angulatus* Melsh. Catal.

*Desc.* Body reddish-brown, minutely punctured: antennæ rufous, serrated: thorax longer than broad, rather widest at the anterior angles, which are much wider than the head; an impressed longitudinal line obsolete on the anterior margin; lateral edge subrectilinear, scutel orbicular; elytra with impressed, punctured striæ.

Length three-fifths of an inch.

The name *angulatus* is pre-occupied.

[A *Corymbites*; the specific name being preoccupied, was replaced by *sulcicollis*, Trans. Am. Phil. Soc. 6, 168.—LEC.]

6. *E. MUSCIDUS*.—Pale brown; thorax very short; antennæ rather robust, simple.

*Elater muscidus* Melsh. Catal.

*Desc.* Body pale brown, a little tinged with reddish, somewhat densely covered with cinereous, short hair: head, transverse line between the antennæ, not elevated in its middle: antennæ very hairy, robust, and rather long, without any appearance of serrature: mouth ciliated above: thorax very short, a little transverse and convex, narrowed before to the width of the head, somewhat widest in the middle, a little contracted before the posterior spines, which are not elongated; a longitudinal slightly impressed line from the base to the middle: scutel orbicular: elytra with impunctured striæ.

Length more than three-fifths of an inch. [257]

This species is more thickly covered with hair than usual. I am unacquainted with the *griseus* Beauv.: but if his figure is even a tolerable representation, our insect is very distinct, his description is too short and unessential to give any assistance.

[This is the type of *Perothops*; it was previously described as *E. mucidus* Schönh.—LEC.]

7. *E. ATTENUATUS*.—Reddish; elytra lanceolate, black at tip. *Elater attenuatus* Melsh. Catal.

*Desc.* Body brownish, sanguineous, with short hairs: head blackish, without any transverse elevated line: antennæ deeply serrated, blackish rufous; third joint very short, not longer than the second; thorax with an impressed abbreviated longitudinal line on the posterior margin; anterior margin not wider than the head; posterior spines rather long and acute: scutel oval: elytra with the striæ obsolete, gradually attenuated to the tip, which is lanceolate, acute; region of the scutel deeply indented; tip black, occupying nearly one-third of the surface, and terminating anteriorly obliquely.

Length nearly four-fifths of an inch.

This species seems to be rare.

[Belongs to *Ludius*.—LEC.]

8. *E. VIRIDIPILIS*.—Depressed, black, covered with short blackish-green hair.

*Desc.* Body dilated, somewhat depressed, black, with a green

reous hair; head with the transverse line between the antennæ obtuse, not prominent: antennæ dark piceous, a little serrate, radix rufous: thorax elevated, convex, breadth equal to the length: a longitudinal impressed line obsolete on the anterior margin; posterior spines moderate: scutel orbicular: elytra with impressed striæ, which have small punctures: postpectus blackish: feet pale rufous.

Length nine-twentieths of an inch.

Unusually short and thick. It is very different from *obesus* nob., by its much more robust form, by having an impressed thoracic line, and by its general color.

[Belongs to *Corymbites*.—LÆC.]

10. *E. EROSUS*.—Brownish-rufous; thorax with five indentations.

*Desc.* Body entirely rufous, tinged with brownish, slightly hairy: head with an impressed longitudinal line: antennæ not serrate, the joints, short, terminal joint produced at tip and acute: thorax short, decidedly broader than long, lateral edge much arcuated, posterior angles short: base with an impressed line extending to the middle, with an abbreviated impressed line on each side of it, not reaching the base; on each side of the middle is a slight indentation: scutel small, orbicular, convex: elytra rather deeply striated, striæ with small punctures: beneath a little paler. [259]

Length two-fifths of an inch.

Differs from *lacunosus* Fabr. in magnitude and color, as well as in the disposition of the thoracic indentations, which in that species are placed 2, 1, 2, whereas in the present species they are 2, 3. I obtained it near the Rocky Mountains, whilst exploring that country with Major Long's party.

[This is *Anelastes Druryi* Kirby (1817): the impressions of the thorax excepting the dorsal line, are frequently wanting.—LÆC.]

11. *E. VIRIDANUS*.—Dull reddish-brown; thorax with two indentations.

*Elater viridanus* Melsh. Catal.

*Desc.* Head with an obsolete indentation on the vertex: antennæ serrate, second joint thicker but shorter than the third: thorax longer than broad, slightly and gradually narrowed be-

fore; two very distinct deeply indented punctures before the middle each side; a longitudinal slightly indented line extends from the base to the middle; posterior angles prominent, acute, scutel oval; elytra with punctured, impressed striæ: beneath paler rufous.

Length seven-twentieths of an inch.

The anterior indentations of the thorax are situated much farther forward than those of the *erosus* nob.

[Belongs to *Sericosomus*.—LEC.]

12. E. ROTUNDICOLLIS.—Thorax rufous, subquadrate, rounded. *Elater ruficollis* Melsh. Catal.

*Desc.* Head blackish-piceous, irregularly punctured, transverse frontal line obtuse; thorax rufous, convex, quadrate; anterior and posterior diameters equal, and equal to the longitudinal diameter; anterior angles obtusely rounded, much wider than the head; edge a little contracted before the posterior angles, which are a little [260] excurved and very acute; scutel blackish-piceous, subtriangular: elytra dusky brownish, with acute hardly punctured striæ and convex interstitial lines: beneath rufo-piceous: tarsi pale.

Length rather more than seven-twentieths of an inch.

The thorax has a remarkably rounded appearance to the unassisted eye. It is different from the *ruficollis* Fabr.

[Belongs to *Corymbites*.—LEC.]

13. E. IMPRESSICOLLIS.—Dull rufous; thorax with an im-



Readily recognizable by the two indentations of the thorax. The name *fuscus* is pre-occupied.

[Is an *Adelocera*.—LEC.]

14. *E. SILACEUS*.—Slender, pale ochreous; head and thorax tinged with rufous.

*Elater silaceus* } Melsh. Catal. [261]  
*Elater umbraticus* }

*Desc.* Body pale yellowish ochreous, with short hairs; slender: head without any prominent transverse line: antennæ not serrated, second and third joint equal and shorter than the succeeding ones, terminal joints not truncated, nor very acute: thorax slightly tinged with rufous; longer than broad; not decidedly narrowed before; anterior angles not broader than the head; posterior angles a little excurved, rather long; a longitudinal obsolete, impressed line: scutel oblong, convex; elytra with punctured striæ not very deeply impressed: venter yellow.

Length nearly three-twentieths of an inch.

A very common species. I have a variety of which the thorax and venter are almost black.

[A *Scricosomus*.—LEC.]

15. *E. RUBRICUS*.—Thorax bright rufous with a large black spot; elytra paler.

*Elater rubricus* Melsh. Catal.

*Desc.* Body oblong oval: head black, transverse line acute, but not very prominent: antennæ piceous, robust, deeply serrated, second and third joint equal, much smaller than the following ones, which are triangular, excepting the terminal ones; ultimate joints slightly truncated at tip: thorax as broad as long, regularly arcuated, and with the head forming a semi-oval; highly polished, bright rufous with a very large black orbicular spot before, reaching beyond the middle: scutel oval, truncate at base: elytra pale brownish-rufous, with regularly punctured, impressed striæ: postpectus and middle of the pectus, black: feet piceous.

Length nearly three-tenths of an inch.

[Belongs to *Elater*; the specimen was immature, as the elytra are usually black.—LEC.]

16. *E. DILECTUS*.—Brownish-black; thorax rufous, bilineate with black. [262]

*Elater trilineatus* Melsh. Catal.

*Desc.* Body short robust: head piceous-black, transverse line prominent, regularly rounded, acute; antennæ hardly serrated, piceous, second and third joints sub-equal, the second joint rather longer; thorax large, convex, rufous, with two longitudinal, dilated blackish lines, which do not reach the base; posterior angles prominent, acute: scutel suborbicular; elytra brownish-black, with regularly punctured, impressed striæ: venter piceous at tip: feet pale.

Length rather more than a quarter of an inch.

Var. a. A rufous dilated vitta extends from the humerus towards the tip of the elytra.

Var. b. Vitta on the elytra, and beneath rufous, feet white.

Var. c. The thoracic vitta confluent, and reaching the base.

The specific name *trilineatus* is pre-occupied.

[Is *Elater auritus* Herbst, and belongs to *Monocrepidius*.—LEO.]

17. E. QUERCINUS.—Black; front concave: feet pale.

*Elater quercinus* Melsh. Catal.

*Desc.* Body slender, black, with rather long hairs: head with the transverse line much elevated and emarginate in the middle: antennæ rather robust, serrated, three basal joints rufous, second and third joints nearly equal: thorax longer than broad, hardly narrowed before; a very slightly impressed longitudinal line: anterior angles not wider than the head; posterior angles depressed, obtuse, piceous: scutel orbicular: elytra with slightly impressed, deeply punctured striæ; feet pale yellowish, tinged with rufous.

scutel oval, truncated: elytra dark brown, obscure piceous at base; striæ slightly impressed, acute, punctured: beneath piceous: postpectus and middle of the pectus blackish: feet pale.

Length seven-twentieths of an inch.

This species is very similar to the preceding, but its greatly superior magnitude puts their specific difference beyond a doubt.

[Also a *Limonius*.—LEC.]

19. *E. RECTANGULARIS*.—Fuscous; robust; posterior angles of the thorax rectangular.

*Desc.* Body robust, very dark brown, almost blackish, with numerous, short, very robust whitish bristles; head with the hairs incurved; transverse line acute: antennæ not reaching more than half the length of the thorax, serrated, pale rufous, first joint fuscous, second and third joints subequal, terminal joint oval: palpi pale rufous: thorax subquadrate, rapidly narrowing before the middle; posterior angles not produced, but rectangular: elytra with regular series of large profound punctures: feet dull rufous. [254]

Length two-fifths of an inch.

This remarkable species I found near the Rocky Mountains, during the journey of Major Long's exploring party. It differs widely from any other species I have seen, by its general aspect, as well as by its short antennæ, (which were completely concealed in the lateral fissures of the pectus,) and the rectangular posterior thoracic angles.

[Belongs to *Lacon*, which I formerly did not consider sufficiently distinct from *Adelocera* to be received as a genus.—LEC.]

20. *E. CUCULLATUS*.—Thorax rather long; frontal line remarkably elevated, and concave above.

*Desc.* Body reddish-brown, with very short hairs: head with the frontal transverse line very much elevated and prominent, lanciform, obtusely rounded and concave on its superior surface: antennæ rather long, slender, not serrated, second joint not much shorter than the third: thorax longer than broad, rather slender, with a longitudinal impressed line; a little narrowed behind the anterior angles, and before the posterior ones, the latter not very prominent, obtuse: elytra indented at the base of each, with im-

pressed punctured striæ, the punctures of the interstitial lines rather large.

Length nine-twentieths of an inch.

The peculiar form of the transverse line of the front, renders this species easy of recognition. I found it on an oak tree in June. In form it has considerable resemblance to *E. pyrrus* Herbst, but is very different by many other characters.

[Belongs to *Pedetes* Kirby, which is composed of species of *Athous*, and have lobed tarsi.—LEC.]

21. *E. GEMINATUS*.—Black: elytra with an oval rufous spot before the middle of each. [265]

*Elater bimaculatus* Melsh. Catal.

*Desc.* Body deep black, polished, with numerous hairs; oblong-oval: head with the transverse line acute, but not prominent: antennæ, basal joint pale rufous: thorax widest at base, gradually narrowed by an arcuated line to the anterior angles which are not wider than the head; no impressed line; posterior angles not prominent: elytra with irregular punctures, destitute of impressed striæ; a large, oblique, oval, bright rufous spot a little before the middle of each, hardly reaching the suture or the exterior edge: feet piceous.

Length less than three-twentieths of an inch.

This pretty little species seems to be allied to the *bimaculatus* of Europe, but the elytra are not striated, as those of that species are.

[Belongs to *Lissomus*.—LEC.]

23. *E. BREVICORNIS*.—Antennæ very short; thorax blackish, anterior and posterior margins piceous. [266]

*Desc.* Head hairy: vertex obtusely indented; transverse line of the front slightly elevated: antennæ not reaching beyond two-thirds the length of the thorax; piceous; joint subcoarctate, serrated second joint much shorter than the third: thorax rather convex, blackish, slightly tinged with very dark purple-coppery, anterior and posterior margins obsoletely piceous; lateral edges parallel, curving inwards before the middle; posterior angles excurved; a longitudinal, obtuse, slightly impressed line obsolete before the middle: scutellum ovate orbicular, hairy: elytra dark brownish, very slightly metallic, lateral margin and suture paler; with impressed, punctured striæ: beneath blackish: feet dull rufous: pectus dull rufous on the anterior margin: venter with the margin, and edges of the segments dull rufous.

Length three-fifths of an inch.

The antennæ are shorter than those of any other species I have seen, with the exception of the *rectangularis* nob., for which, however, it cannot be mistaken.

[This is the female of *Corymbites appressifrons*.—LEC.]

24. *E. CLYPEATUS*.—Black; antennæ and feet rufous; clypeus extending down to the mouth.

*Desc.* Body slender, deep black, punctured: head with a shallow rounded indentation on the front: clypeus narrowed between the antennæ, thence dilated and extending down to the mouth: antennæ serrate, bright rufous, joints short, second about one-third as long as the third joint: thorax widest at the base, posterior angles excurved, and towards their tips incurved: scutellum rather large; elytra with impressed, punctured striæ; second, third, and fourth striæ confluent behind the middle: feet dull rufous.

Length less than one-fifth of an inch.

[267]

This may be mistaken for the *quercinus* nob.; but an inspection of the form of the head and its parts will show that it is very distinct. The form of the clypeus is somewhat unusual; instead of terminating in an elevated line between the antennæ, or but little before them, it is very much narrowed in that part, and as it descends towards the mouth, it dilates very much.

[Belongs to *Eucnemis*.—LEC.]

25. *E. INSIPIENS*.—Bright reddish-brown; transverse frontal line much elevated, rounded.

*Desc.* Body rather slender, bright reddish-brown, polished: head with the transverse line prominent, regularly rounded, the edge acute; antennæ a little serrate, second and third joints subequal: thorax with an obsolete impressed line at base: elytra with impressed punctured striæ.

Length more than one-fifth of an inch.

[A species of *Cratonychus*.—LEC.]

26. *E. APPRESSIFRONS*.—Obsoletely metallic; transverse frontal line not prominent.

*Desc.* Body rather slender, dark brownish, with a slight brassy tinge; hairs recurved, not prominent: head with the frontal line or tip of the clypeus not elevated, but decurved between the antennæ: antennæ rather robust, serrate; second joint much shorter than the third, which is of the same form, and nearly of the same size as the fourth; terminal joint abruptly contracted near the tip; thorax with an impressed longitudinal line obsolete before: elytra with acute, punctured striæ, suture exterior margin somewhat paler: feet piceous: abdomen margined with dull rufous.

Length two-fifths of an inch.

Rather common. It closely resembles *cybindriformis* nob.: but that insect is somewhat larger, with a prominent, emargined [268] frontal line, the third joint of the antennæ is cylindrical, altogether different in form from the fourth, and the ultimate

black, with impressed, punctured striae: pectus each side bright rufous.

Length rather less than seven-twentieths of an inch.

Herbst considers this as a variety of the *thoracicus* Fabr., to which indeed it is very similar, but that species differs in having the tip of the clypeus, or the transverse frontal line, reflected, and the third joint of the antennæ much longer and more dilated than the second. Our species is also very similar to the *verticinus* Beauvois, but the latter is greatly larger, the head is either partially or entirely rufous, and the third joint of the antennæ is much longer than the second; it has been called *rubricollis* by Herbst, but Beauvois' name has the priority.

[Belongs to *Elater*; Beauvois never described the species.—LEC.]

#### ADDITIONS AND CORRECTIONS.

Page 29, line 8 from bottom, for *polyturator* read *polycerator*.

33, after description of *Blaps hispilabris*, add:

[Does not seem distinct from *B. obscura*.—LEC.]

35, after *ÆGERIA* add PLATE XIX.

191, at bottom add:

[Differs from *Lytta aenea* Say, Jour. Acad. Nat. Sc. 3, 301, and is described by me as *L. Sayi*, Proc. Acad. 6, 336.—LEC.]

263, line 5, for *COLLARE* read *COLLARI*.

270, line 17, for *hilaria* read *hilaris*.

285, after *C. AEGULA* add:

[Belongs to *Conotrachelus*.—LEC.]

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*Papilio P. ...*

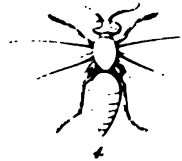




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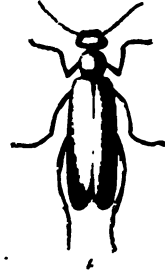
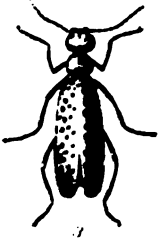
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4

1 *STENOBOTHRUS grandis* ♀ 2 *STENOBOTHRUS maculatus*  
 2 ♂ 3 not sure

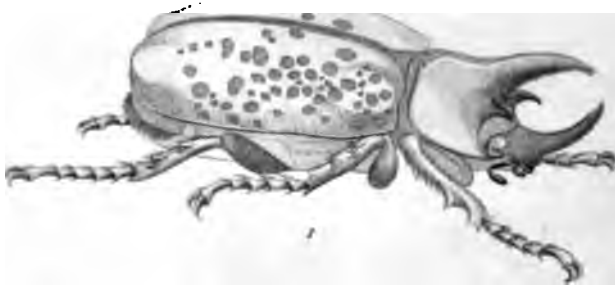




*1 Lytta sordida*    *3 Lytta maculata*  
*2 albida*    *4 sphaerocollis*







*1 Scarabaeus laticornis*

*2 Scarabaeus laticornis*





*Acrydium ornatum*

2            *laterale*

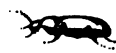
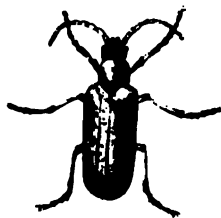
3            *id.*





1 *Laphria fulvicornis*  
 2       *sericea*  
 3       *dissecta*

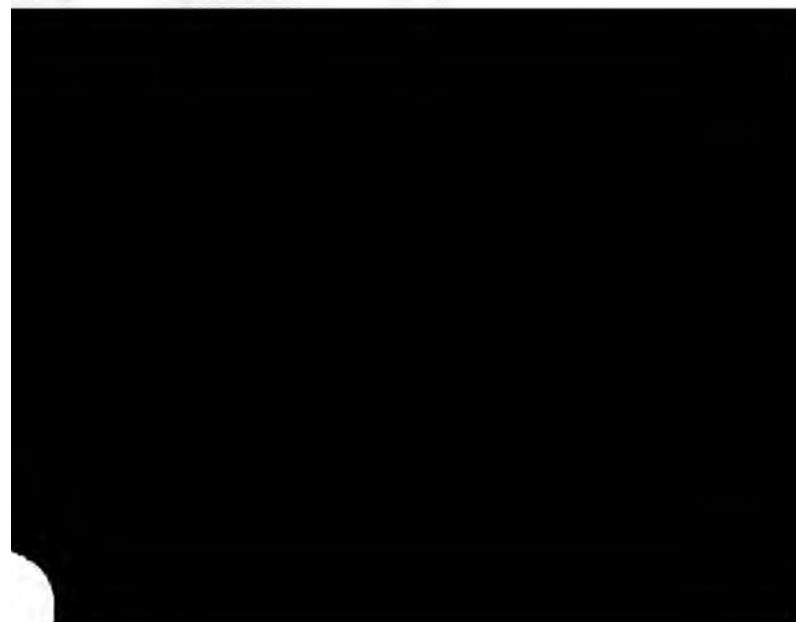
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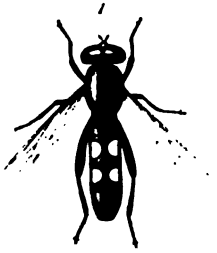
*Stenopenthes (Stenopenthes)*

*Wm. I. R. Paul.*

*J. Mayer & Co. Lith.*







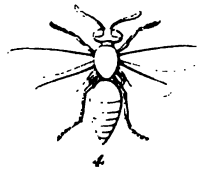
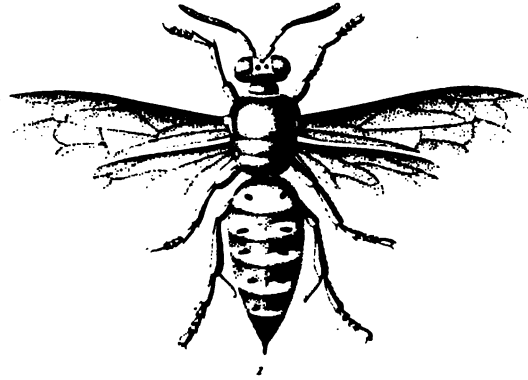
- 1. *Aylota opacoides*
- 2. *quadrista*
- 3. *peruviana*
- 4. *harmatodes*



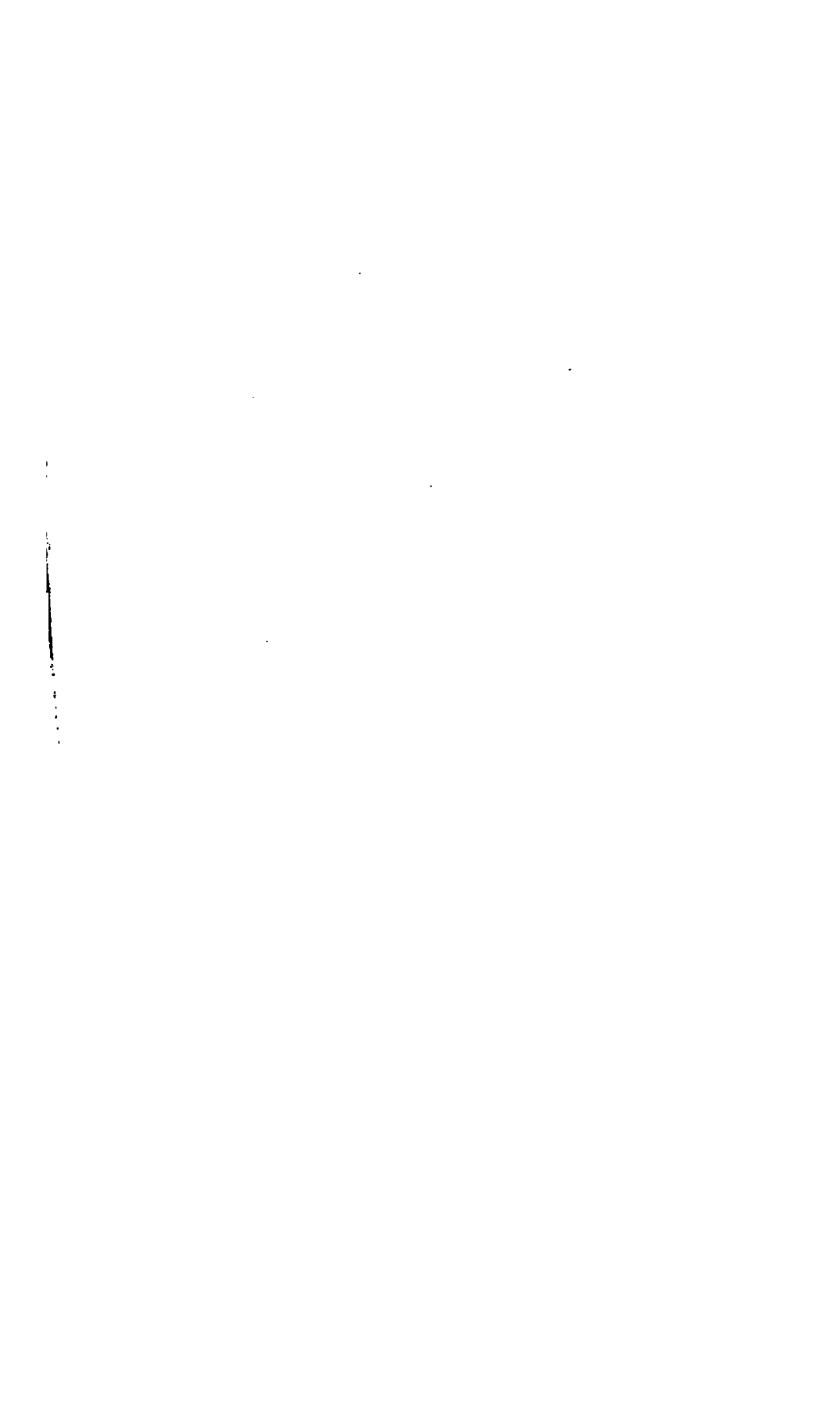


- 1 *Calindus unicolor*  
 2 *Calindus punctatus*  
 3 *Calindus punctatus*  
 4 *Calindus punctatus*





1 *Stizus grandis* ♀    3. *Stizus uncinatus*  
 2.                    ♂    4.                    nat. size



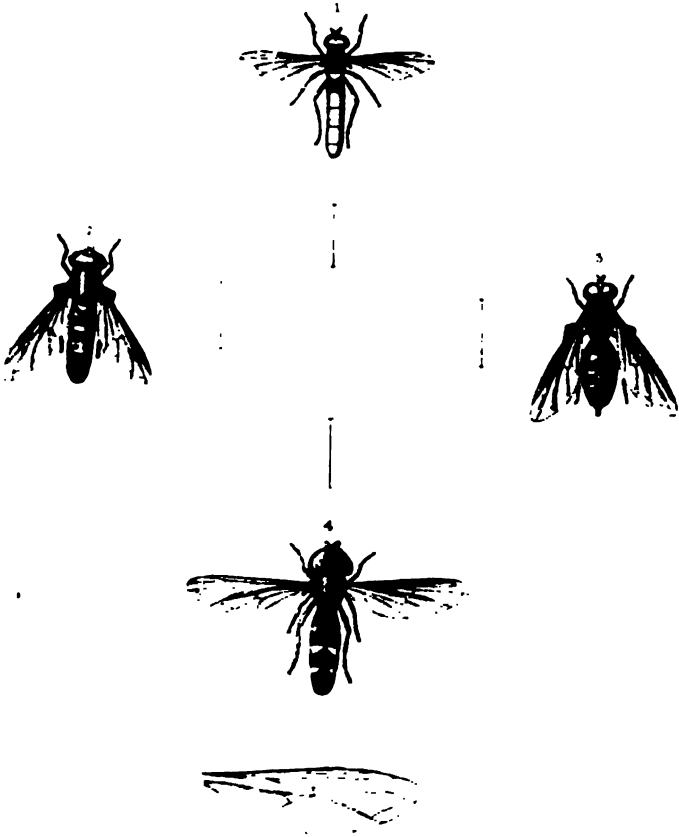


1. *Anthrenus hudsoni*  
2. *Anthrenus mendax*



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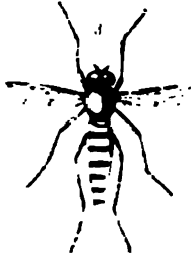
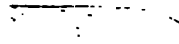
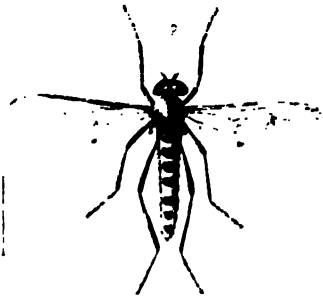
1. *Nyrphites cylindricus*  
 2. *obliquus* var.  
 3. *pallidus*  
 4. *chinensis*

1000



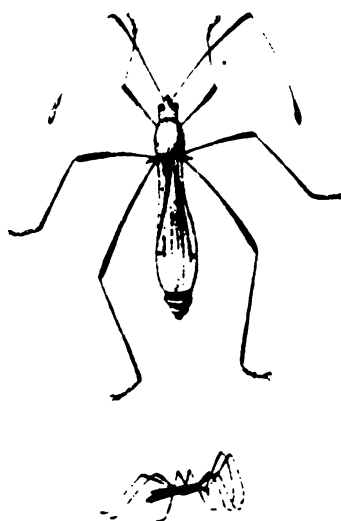
*Smerinthus ornatus*.

1



- 1 *Leptocryptus*
- 2 *Leptocryptus*
- 3 *Leptocryptus*
- 4 *Leptocryptus*





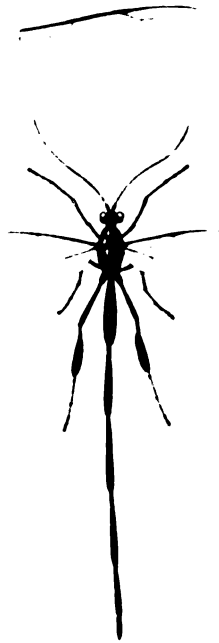
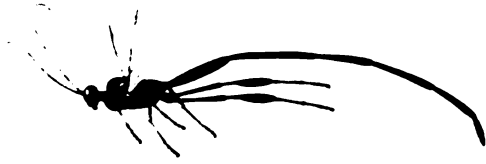
*Berytus sinensis*



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U.S. 100



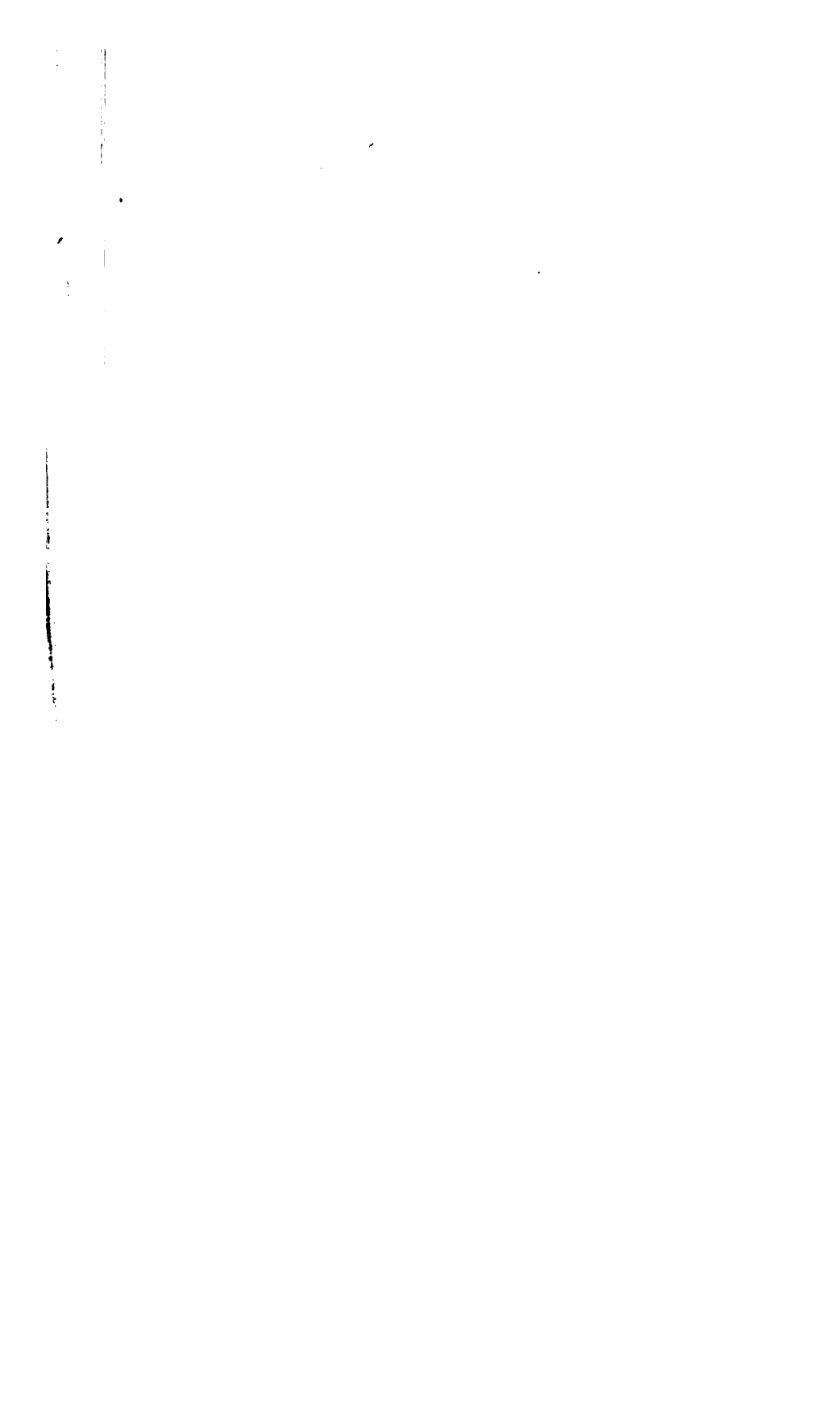


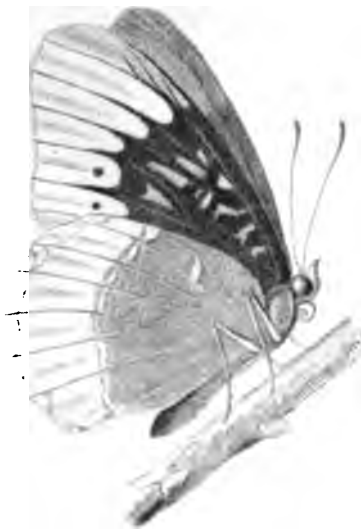
*Pelecinus pubescens*



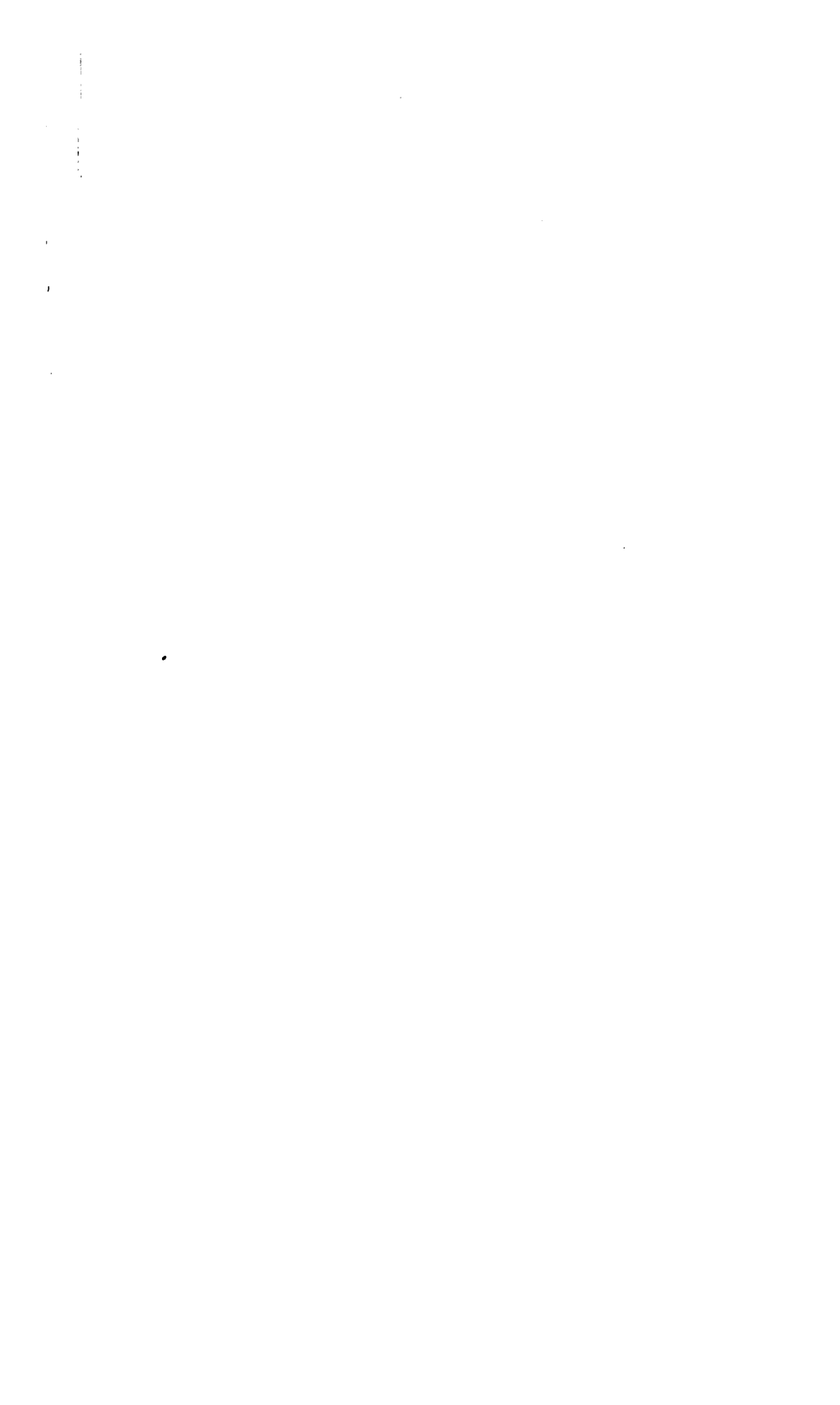


- 1 *Molpa* *mut.*
- 2 *costaricensis*
- 3 *obscura*
- 4 *hirsuticornis*



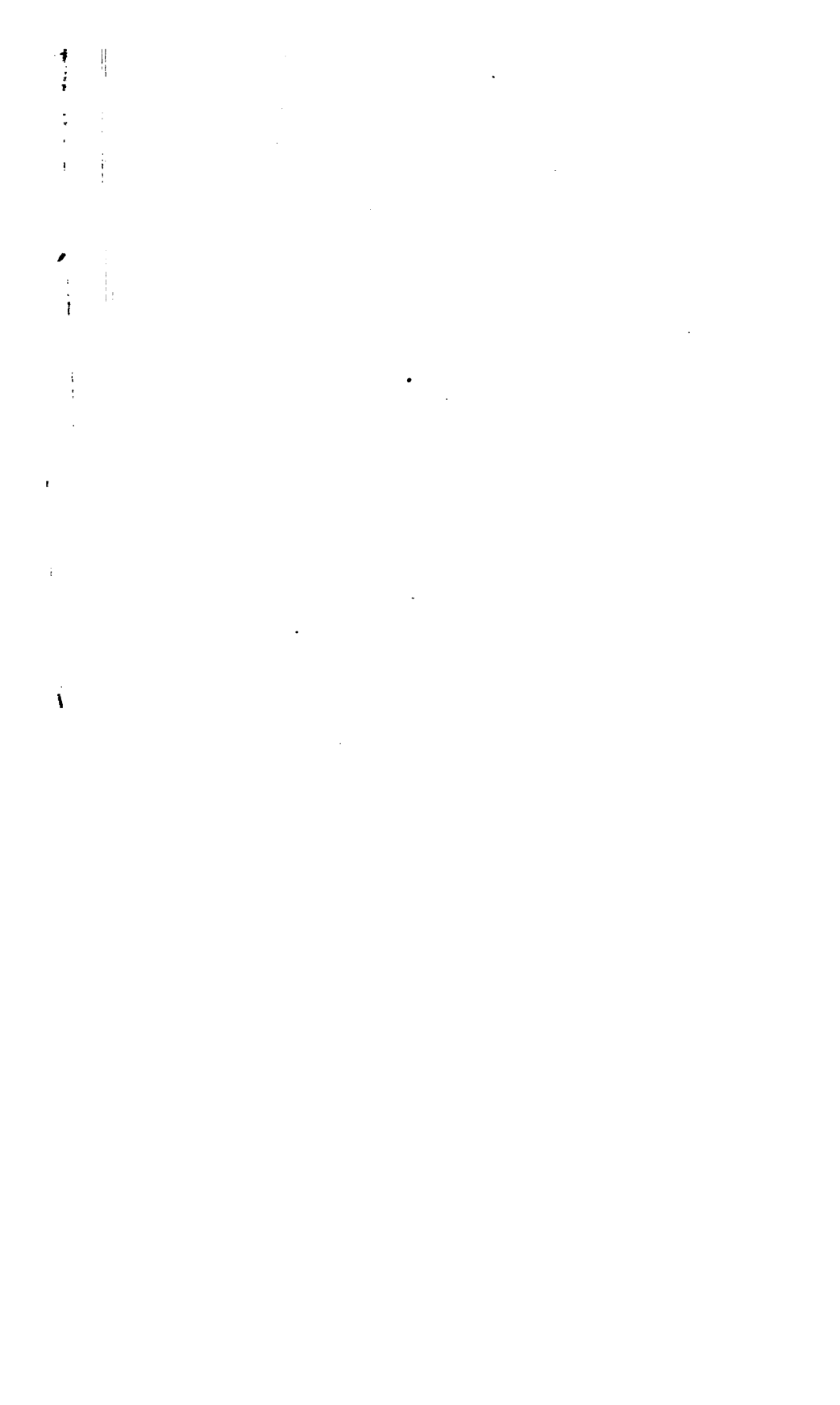


*Antonia Dana*





1 *Cicindela dorsalis*  
2 *Cicindela*







*Smerinthus geminatus*



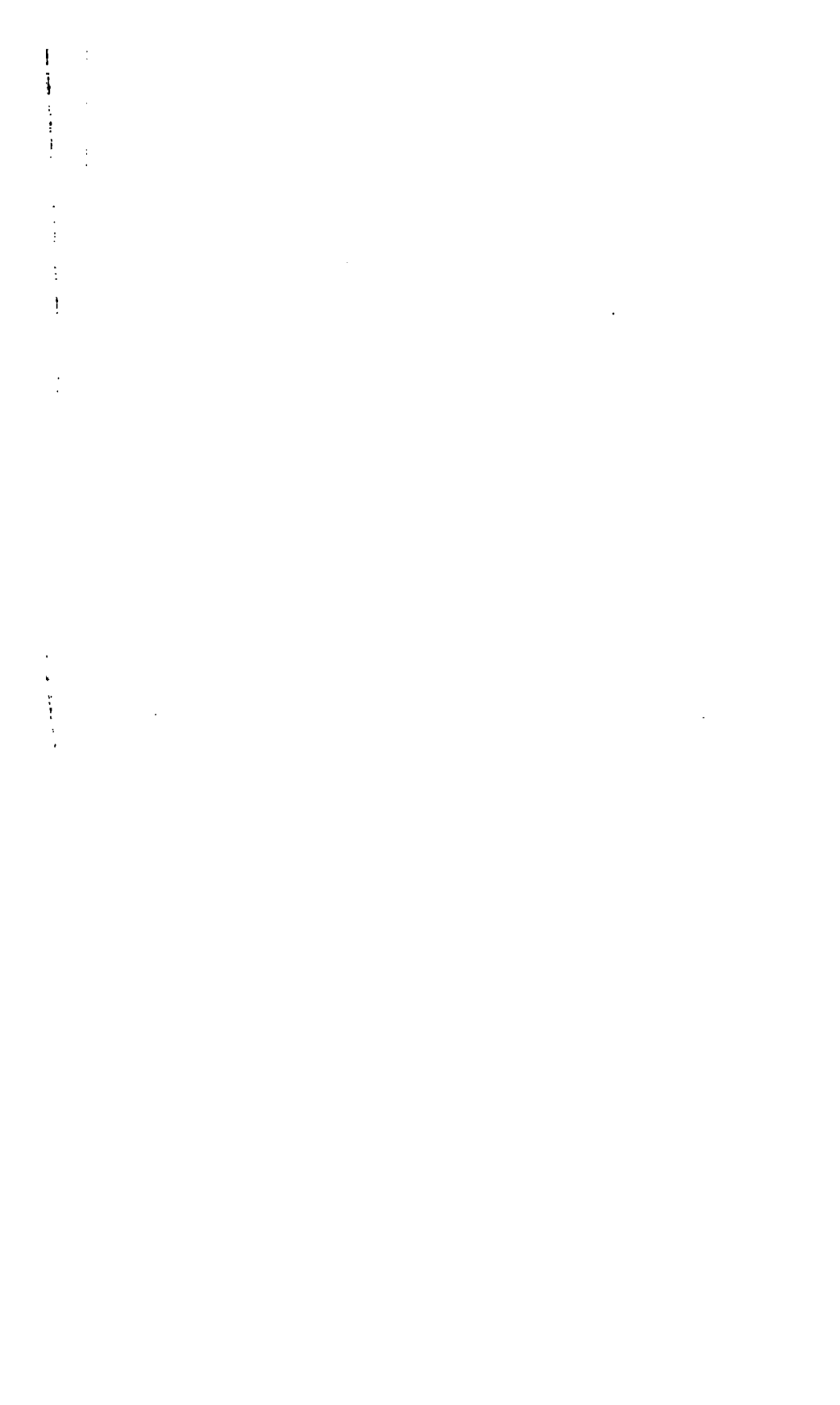


*Chromocentrus rufus*





- 1 *Lucyca* *reticulata*
- 2 *Lucyca* *reticulata*
- 3 *Lucyca* *reticulata*
- 4 *Lucyca* *reticulata*

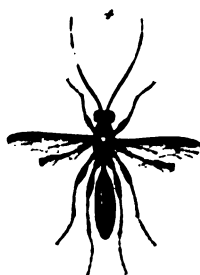
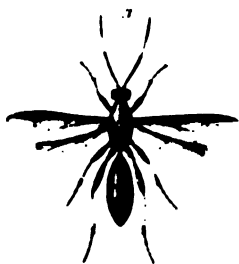
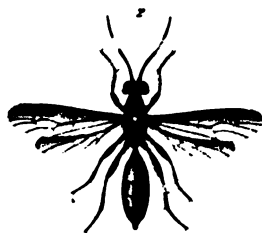




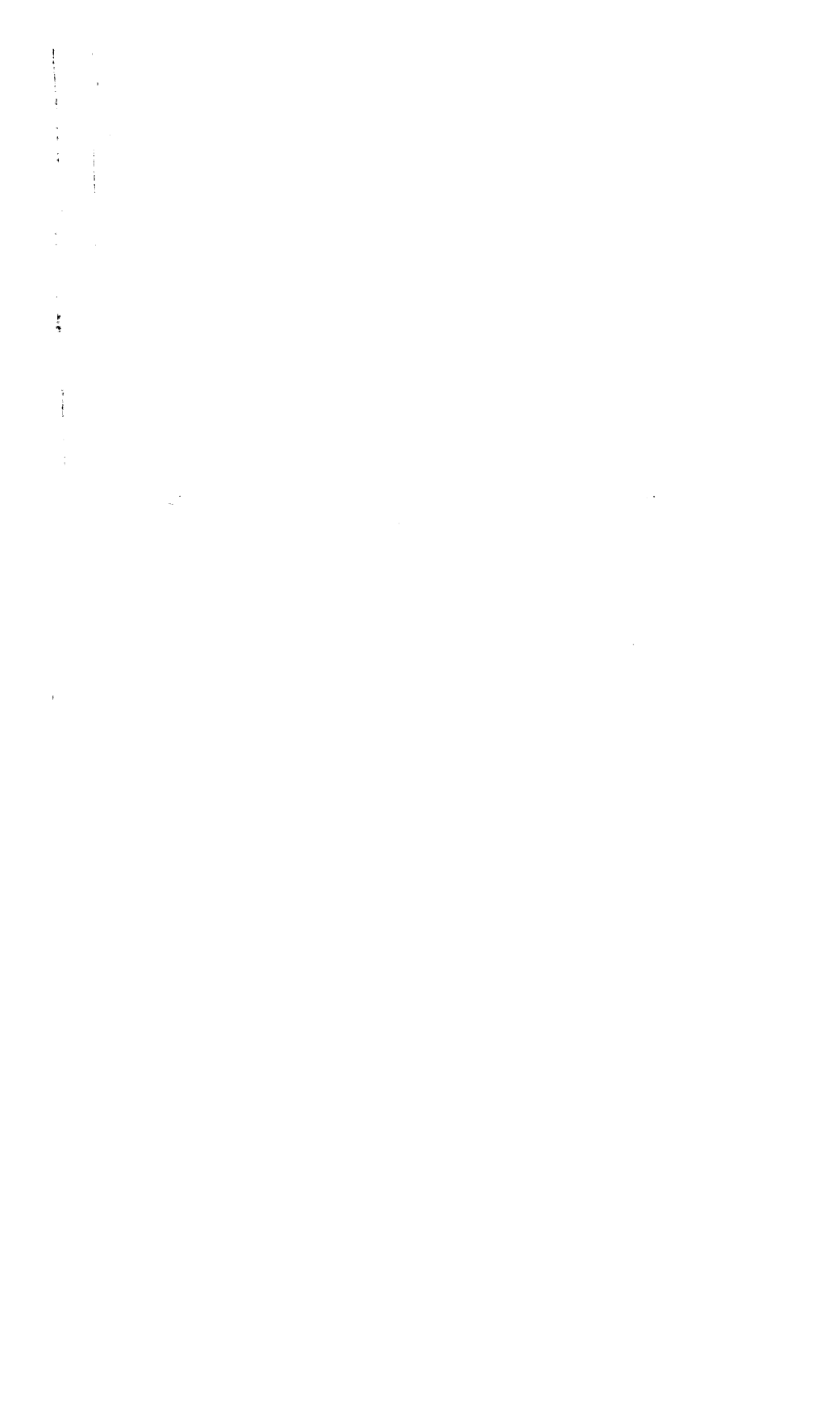
- 1 *Lycus* *reticulatus*
- 2 *Lycus* *terminalis*
- 3 *Lycus* *pubescens*
- 4 *Lycus* *marginatus*

1. The first part of the document is a list of names and addresses of the members of the committee.





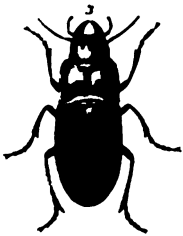
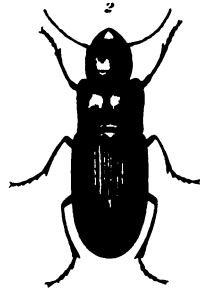
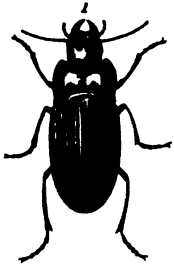
- 1 *Aneumon* *brunneator*  
 2 *do* *do*  
 3 *do* *do*  
 4 *do* *do*





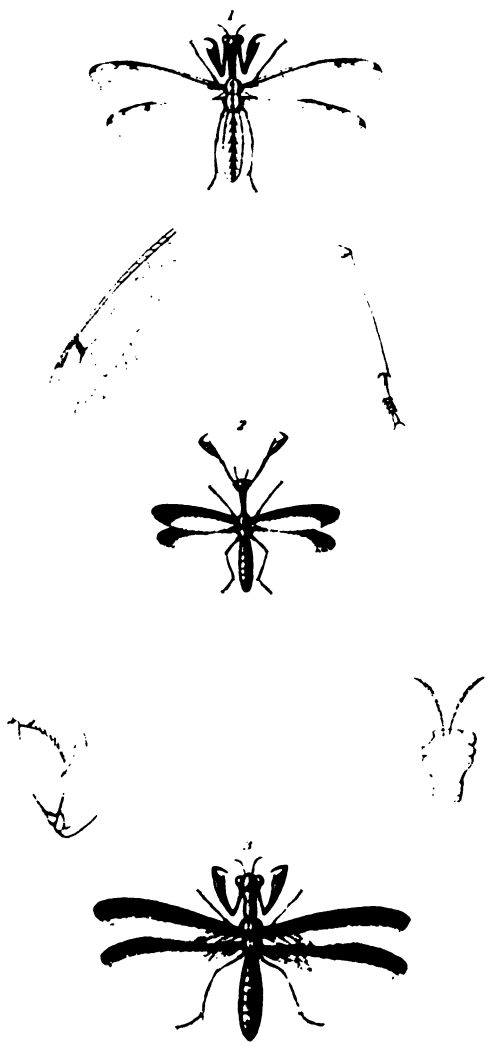
*Limenitis arthemus*





- 1 *D. setosus* *plumbatus*
- 2       *rubens*
- 3       *dimidiatus*
- 4       *marginatus*

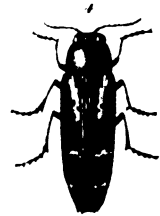
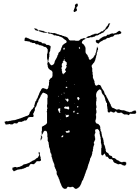
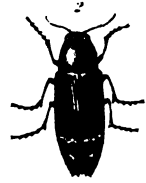
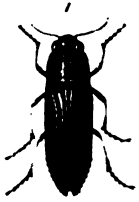




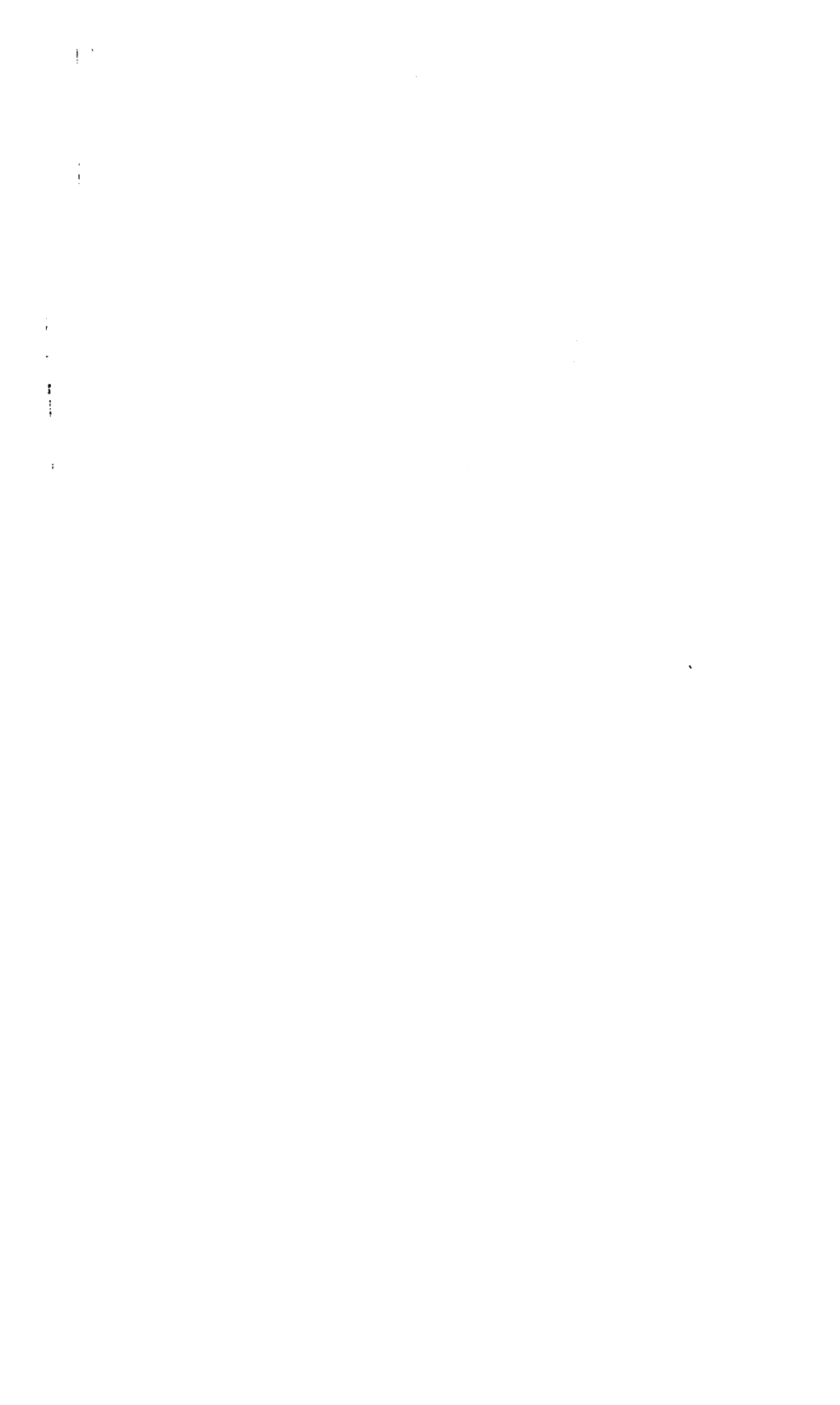
1. *Mantopsephus*  
 2. "  
 3. "







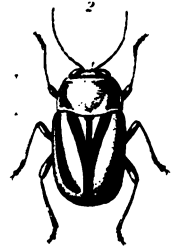
- 1. *Agabus unicolor*
- 2. *Agabus*
- 3. *Agabus*
- 4. *Agabus*



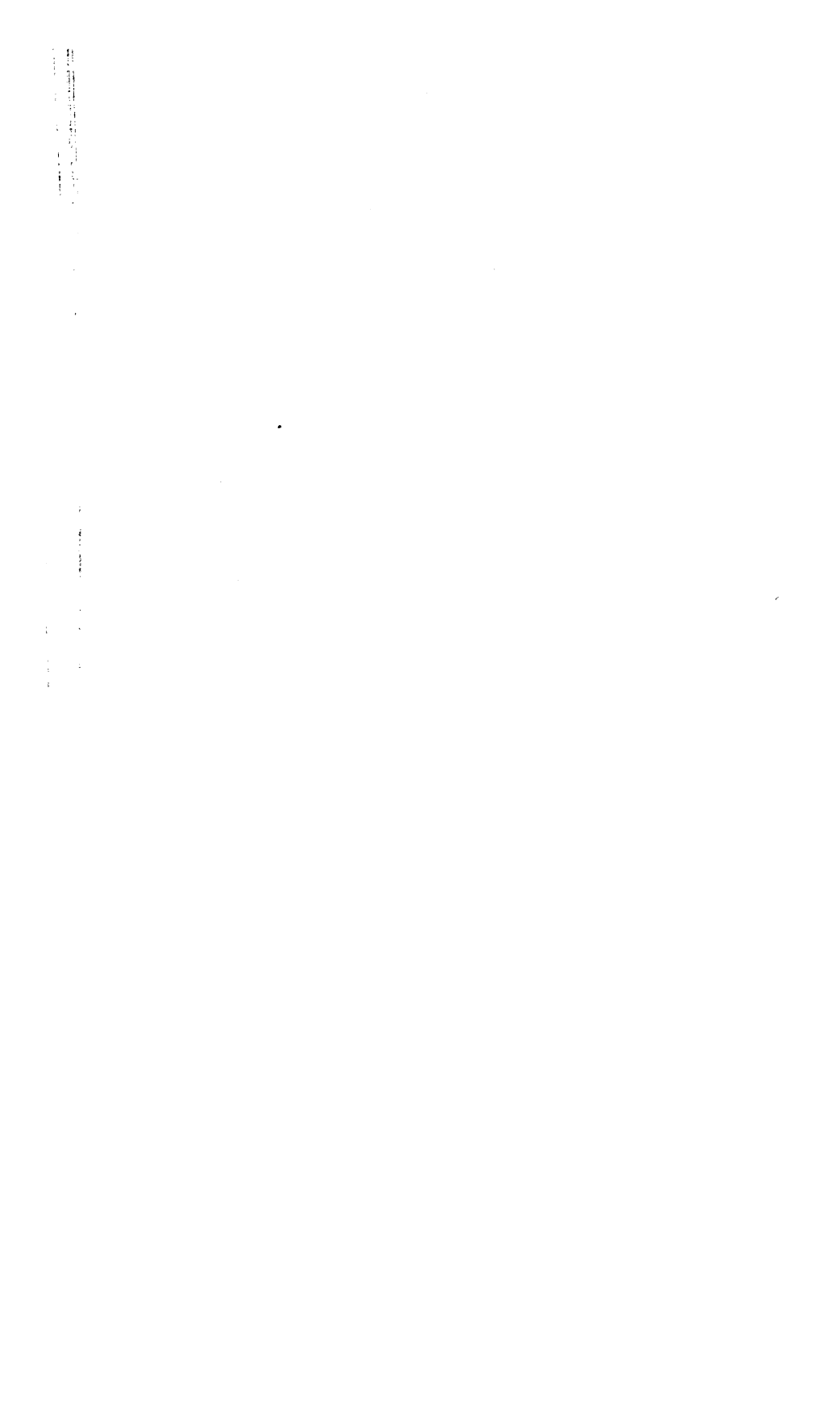


*Vanessa io*



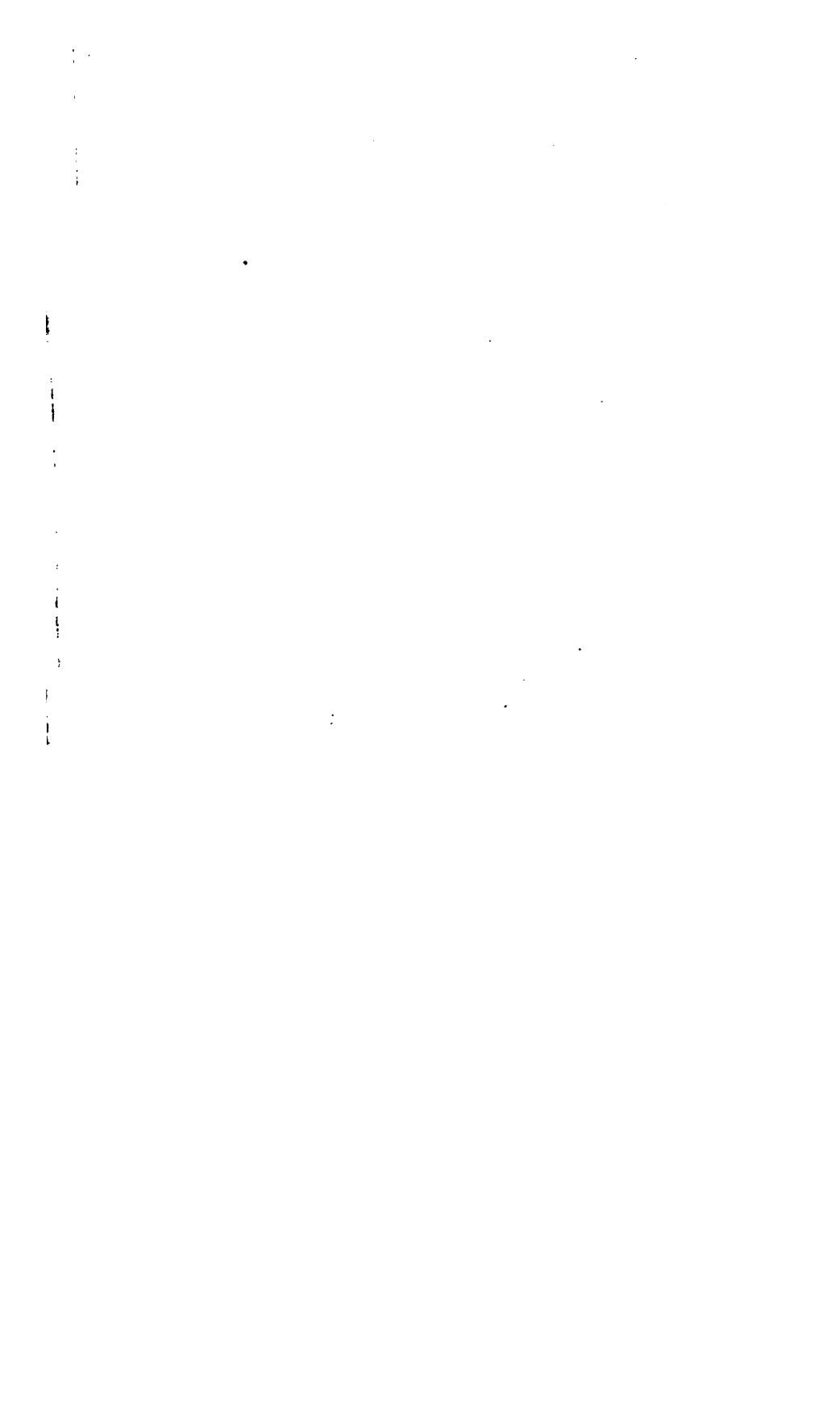


1. *Cryptorhynchus confusus*  
 2. "  
 3. "  
 4. "  
 5. "





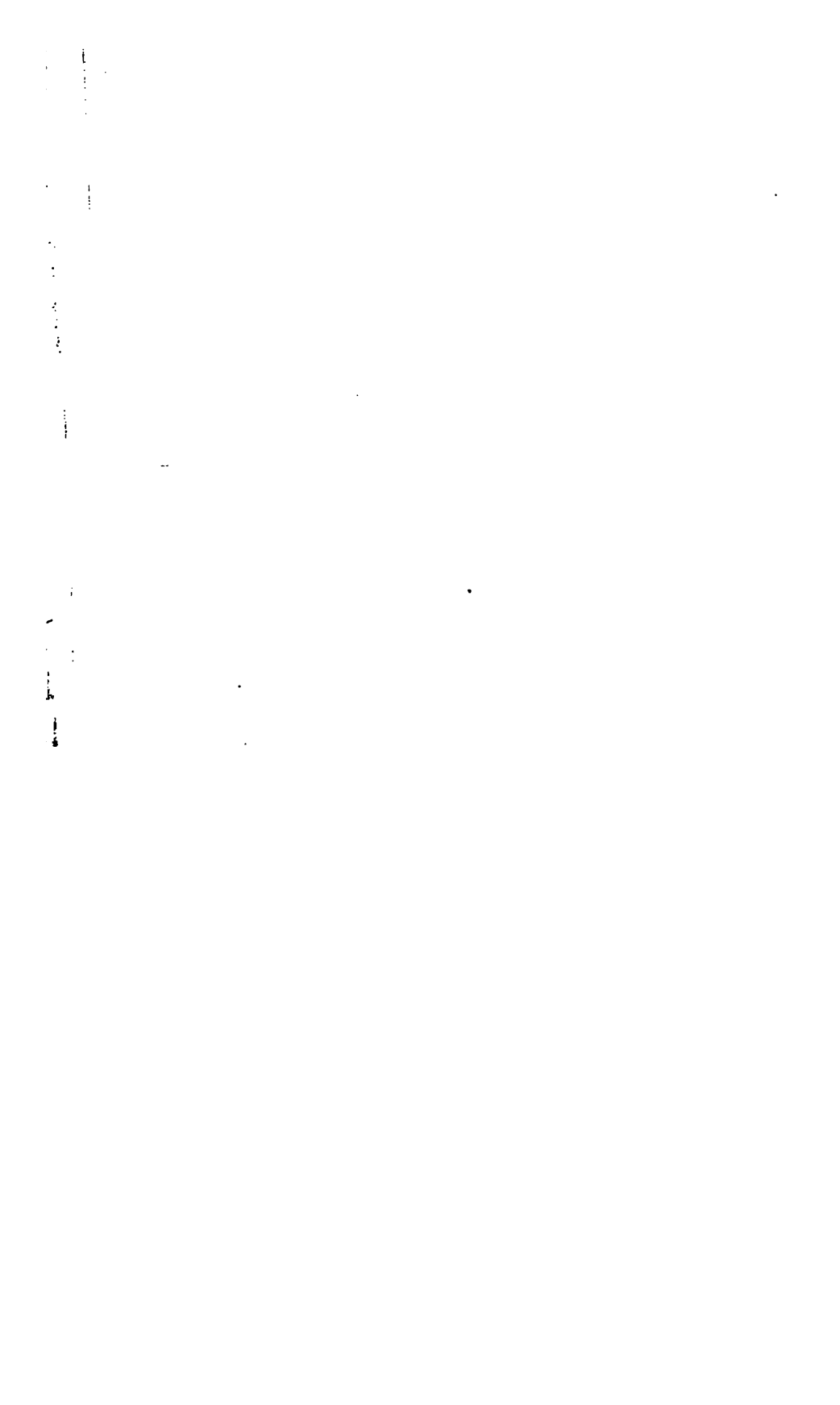
1. *Nesidea ruficornis*  
2. *truncata*  
3. *maculata*

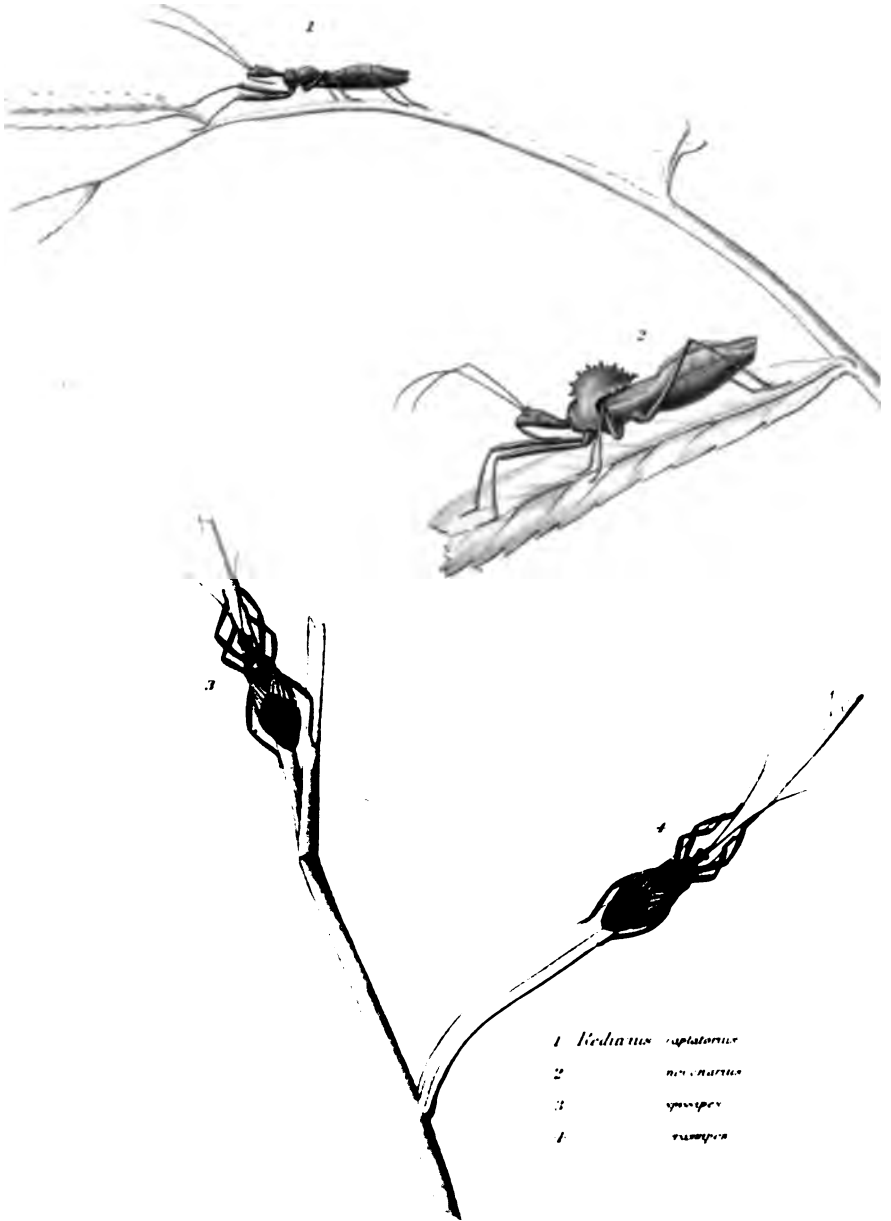






*Pieris nympha*



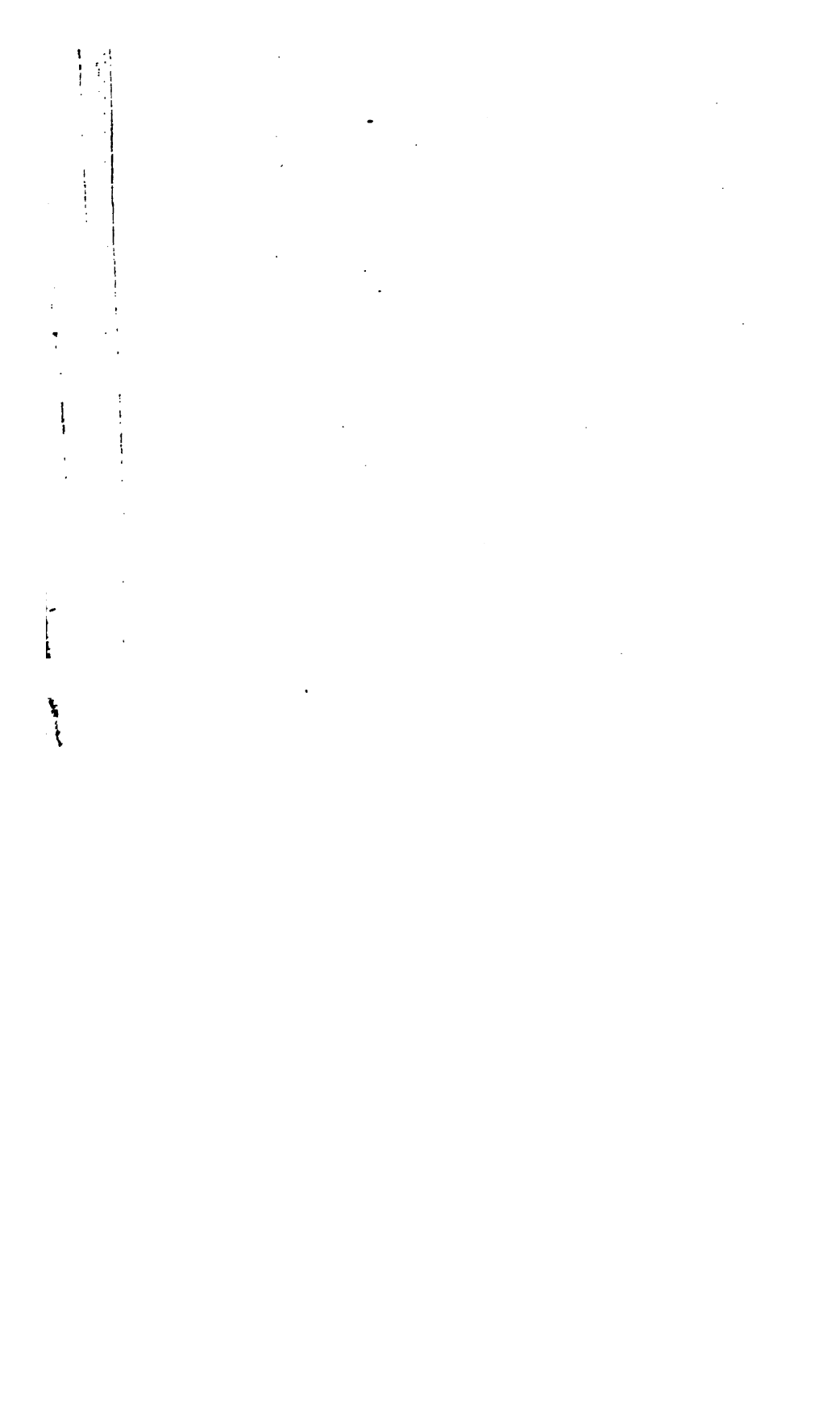


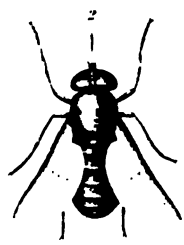
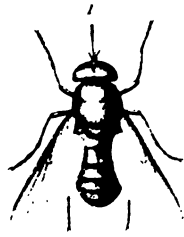
1 *Redivivus exaltatorius*  
 2 *Redivivus neoharcticus*  
 3 *Redivivus*  
 4 *Redivivus*





1. *Ephemera*  
 2. *Ephemera*  
 3. *Ephemera*





1 *Euphorus scrobalis*  
2

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial statements. This includes not only sales and purchases but also expenses and income.

The second part of the document provides a detailed breakdown of the accounting cycle. It outlines the ten steps involved in the process, from identifying the accounting entity to preparing financial statements. Each step is explained in detail, with examples provided to illustrate the concepts.

The third part of the document discusses the various types of accounts used in accounting. It categorizes accounts into assets, liabilities, equity, revenue, and expense accounts. It also explains how these accounts are used to record transactions and how they are balanced at the end of each period.

The fourth part of the document discusses the importance of adjusting entries. It explains how these entries are used to ensure that the financial statements reflect the true financial position of the company at the end of the period. Examples are provided to show how adjusting entries are recorded and how they affect the accounts.

The fifth part of the document discusses the preparation of financial statements. It outlines the steps involved in preparing the balance sheet, income statement, and statement of owner's equity. It also explains how these statements are used to provide information to management and other stakeholders.

The sixth part of the document discusses the importance of internal controls. It explains how these controls are used to prevent and detect errors and fraud. Examples are provided to show how internal controls are implemented in a business.

The seventh part of the document discusses the importance of ethics in accounting. It explains how accountants are expected to act in a fair and honest manner and to follow the principles of professional conduct. Examples are provided to show how ethical decisions are made in accounting.

The eighth part of the document discusses the importance of communication in accounting. It explains how accountants must be able to communicate effectively with management and other stakeholders. Examples are provided to show how communication is used in accounting.

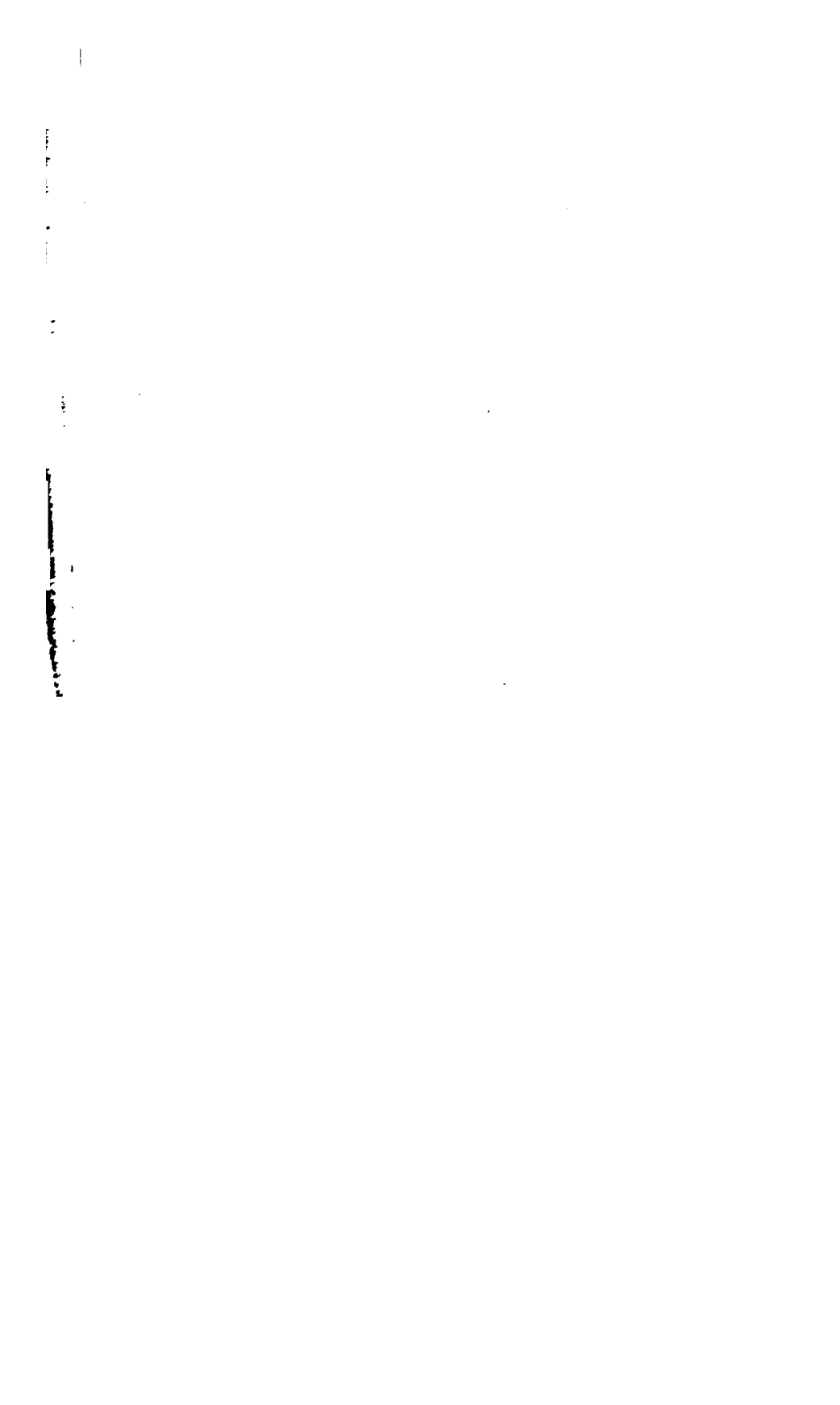
The ninth part of the document discusses the importance of technology in accounting. It explains how technology is used to automate accounting processes and to improve the accuracy and efficiency of the system. Examples are provided to show how technology is used in accounting.

The tenth part of the document discusses the importance of continuous learning in accounting. It explains how accountants must stay up-to-date on the latest developments in the field and how they can continue to learn throughout their careers. Examples are provided to show how continuous learning is used in accounting.





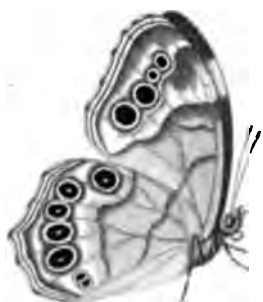
1 *Grasshopper*  
 2 *Grasshopper*  
 3 *Grasshopper*





*Heteromyia fasciata*





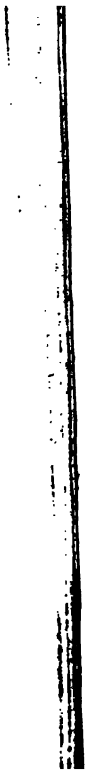
*Hyparochus Andromacha*





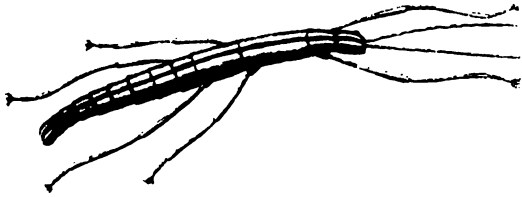
1 *Reductus aptatorius*  
 2 *Reductus nevadensis*  
 3 *Reductus spissipes*  
 4 *Reductus ruscipes*

Drawn by C. A. Le Sueur

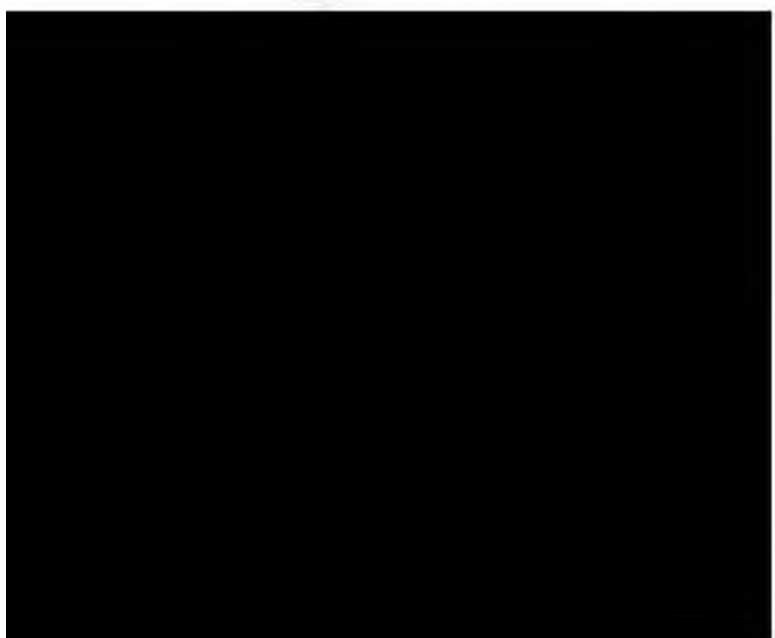


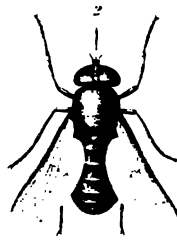
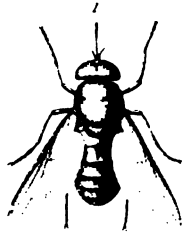
.





*Spectrum hortatum*





1 *Pimpla maculipes*

2 *Pimpla maculipes*





*Papilio deione*

11



*Hyperanthus subvinctus*

1

2

3

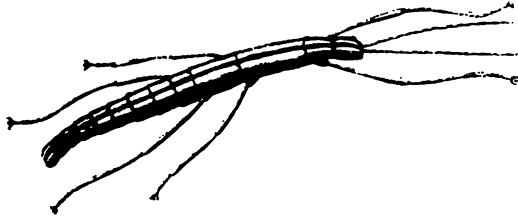
4





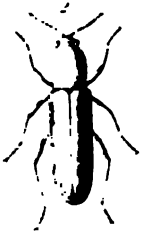
*Hyparctia Andromacha*





*Spectrum hystrix*





*Mangrove* *sp.*  
 2. *Mangrove*  
 3. *Mangrove*  
 4. *Mangrove*

11111

11111

1



*Lycaena*

1000

1000





- 1) *Staphylinus*
- 2) *Staphylinus*
- 3) *Staphylinus*
- 4) *Staphylinus*
- 5) *Staphylinus*





- 1 *Longitarsus* *longitarsis*
- 2 *Longitarsus* *longitarsis*
- 3 *Longitarsus* *longitarsis*
- 4 *Longitarsus* *longitarsis*
- 5 *Longitarsus* *longitarsis*

1



1. *Carabus* *sp.*  
2. *Carabus* *sp.*  
3. *Carabus* *sp.*  
4. *Carabus* *sp.*  
5. *Carabus* *sp.*





1 *Pimpla pomonae*  
 2 *Pimpla ruficornis*  
 3 *Pimpla ruficornis*

1





*Ellytra tenebrata*

2      *fulva*

3      *alternata*

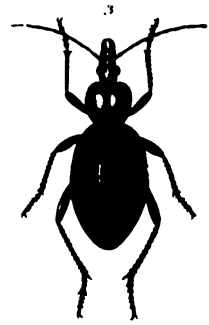
4      *multipes*

Vertical text or markings on the left edge of the page, possibly a page number or header.



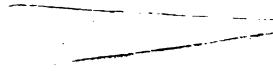
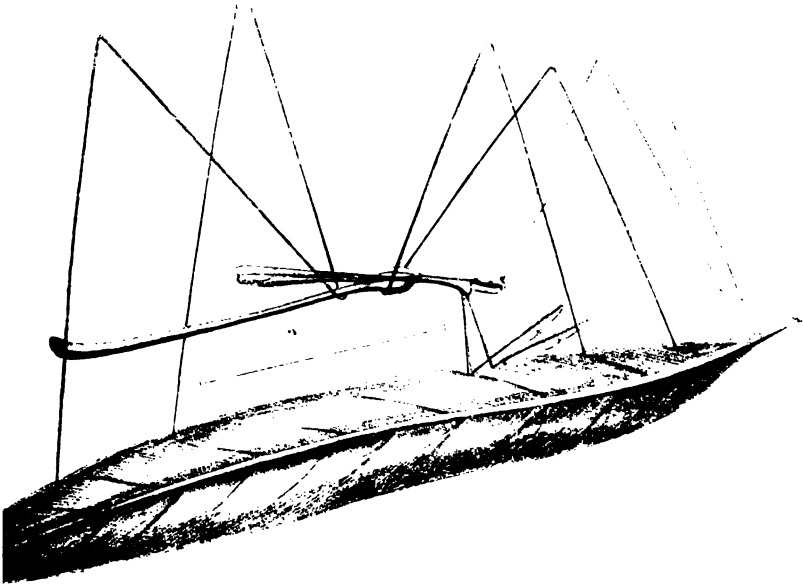
- 1 *Phryganea aeneipes*  
 2                    "   "  
 3                    *saltator*  
 4                    *intercepta*  
 5                    *de summa*

!



- 1 *Cychtus rubus*  
2 *Sphaerolobus maculatus*  
3 *bidens*  
4 *S. apunctatus elevatus*

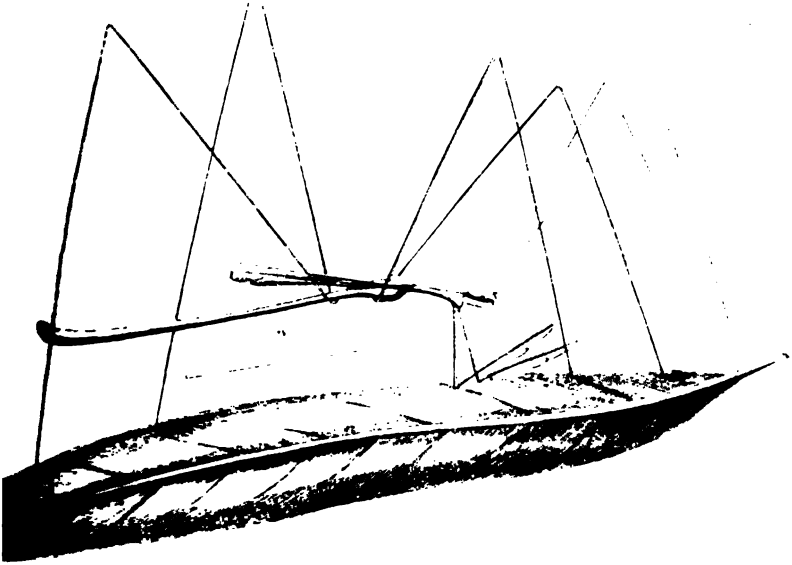
1



*Pleusia brevirostris*

1





*Phaethon scarpensis*

1



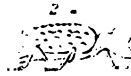
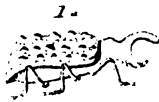
- 1 *Philaethus canaliculatus*
- 2 *verticillatus*
- 3 *zonatus*
- 4 *politus*

1



*Hipparchia semula*

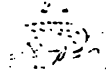
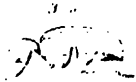
1



1. *Helethophagus cornutus* ♂  
 2.                                    "   ♀  
 3.                                    *corticola* .

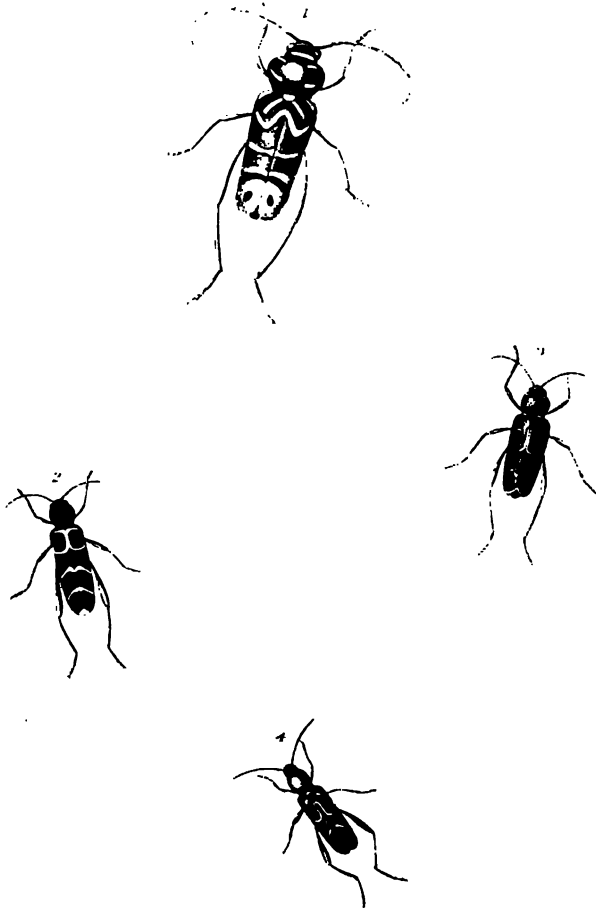
1





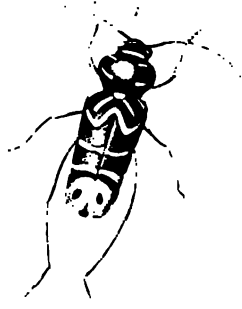
1 *Isclerophagus cornutus* ♀  
2                    "       ♂  
3                    *cornicola*

Vertical line of text or markings on the left side of the page.



- 1 *Chylus speciosus*  
 2 *caprea*  
 3 *undulatus*  
 4 *hamatus*





*Chelonus maculatus*  
1. *Chelonus maculatus*  
2. *Chelonus maculatus*  
3. *Chelonus maculatus*  
4. *Chelonus maculatus*











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